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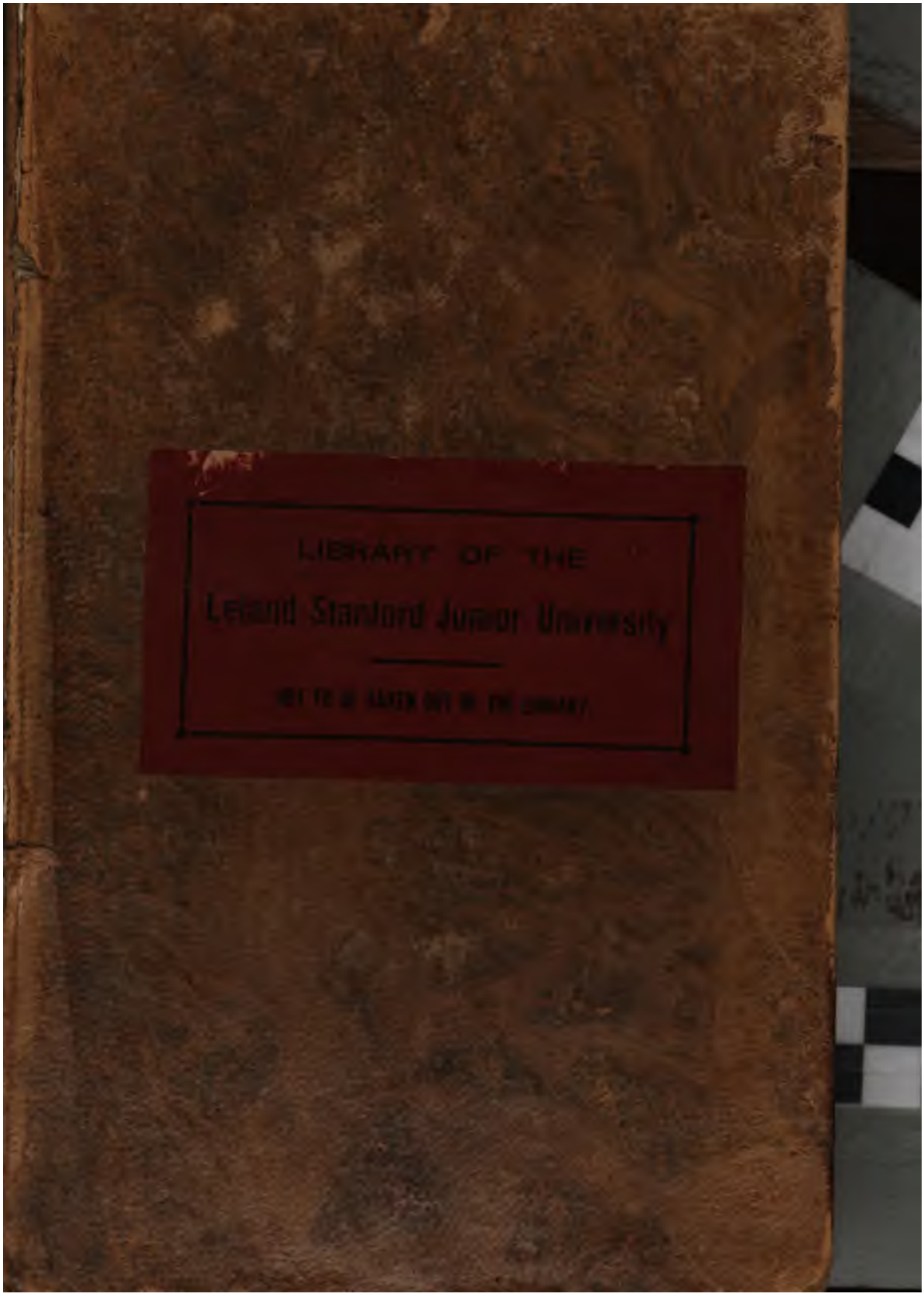
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A HISTORY OF THE EARTH AND ANIMATED NATURE

By Oliver Goldsmith

Published by Edwd Poole 1823

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A

HISTORY OF THE EARTH,

AND

ANIMATED NATURE.

BY OLIVER GOLDSMITH, M. B.

ILLUSTRATED WITH COPPERPLATES.

A NEW EDITION, WITH CORRECTIONS AND ADDITIONS

IN FIVE VOLUMES.—VOL. II.

PHILADELPHIA:

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Chinese.
Laplander.
Hottentot.
Negro.
American.

A HISTORY

OF ANIMALS.

———000———

CHAPTER I.

OF THE VARIETIES IN THE HUMAN RACE.

HITHERTO we have compared man with other animals; we now come to compare men with each other. We have hitherto considered him as an individual, endowed with excellencies above the rest of the creation; we now come to consider the advantages which men have over men, and the various kinds with which our earth is inhabited.

If we compare the minute differences of mankind, there is scarcely one nation upon the earth that entirely resembles another; and there may be said to be as many different kinds of men as there are countries inhabited. One polished nation does not differ more from another, than the merest savages do from those savages that lie even contiguous to them; and it frequently happens that a river or a mountain divides two barbarous tribes, that are unlike each other in manners, customs, features, and complexion. But these differences, however perceivable, do not form such distinctions as come within a general picture of the varieties of mankind. Custom, accident, or

fashion, may produce considerable alterations in neighbouring nations; their being derived from ancestors of a different climate or complexion, may contribute to make accidental distinctions, which every day grow less; and it may be said, that two neighbouring nations, how unlike soever at first, will assimilate by degrees, and by long continuance the difference between them will at last become almost imperceptible. It is not, therefore, between contiguous nations we are to look for any strong marked varieties in the human species; it is by comparing the inhabitants of opposite climates and distant countries; those who live within the polar circle with those beneath the equator; those that live on one side of the globe with those that occupy the other.

Of all animals the differences between mankind are the smallest. Of the lower races of creatures, the changes are so great as often entirely to disguise the natural animal, and to distort or to disfigure its shape. But the chief differences in man are rather taken from the tincture of his skin than the variety of his figure; and in all climates he preserves his erect deportment, and the marked superiority of his form. If we look round the world, there seems to be not above six distinct varieties in the human species,* each of which is strongly marked, and speaks the kind seldom to have mixed with any other. But there is nothing in the shape, nothing in the faculties, that shows their coming from different originals; and the varieties of climate, of nourishment, and custom, are sufficient to produce every change.

The first distinct race of men is found round the polar regions. The Laplanders, the Esquimaux Indians, the Samoeid Tartars, the inhabitants of Nova Zembla, the Borandians, the Greenlanders, and the

* I have taken four of these varieties from Linnæus; those of the Laplanders and Tartars from M. Buffon.

natives of Kamtschatka, may be considered as one peculiar race of people, all greatly resembling each other in their stature, their complexion, their customs, and their ignorance. These nations being under a rigorous climate, where the productions of nature are but few, and the provisions coarse and unwholesome, their bodies have shrunk to the nature of their food; and their complexions have suffered from cold almost a similar change to what heat is known to produce, their colour being a deep brown, in some places inclining to actual blackness. These, therefore, in general, are found to be a race of short stature, and odd shape, with countenances as savage as their manners are barbarous. The visage, in these countries, is large and broad, the nose flat and short, the eyes of a yellowish-brown, inclining to blackness, the eye-lids drawn towards the temples, the cheek-bones extremely high, the mouth very large, the lips thick and turned outwards, the voice thin and squeaking, the head large, the hair black and straight, the colour of the skin of a dark grayish.* They are short in stature, the generality not being above four feet high, and the tallest not above five. Among all these nations the women are as deformed as the men, and resemble them so nearly, that one cannot at first distinguish the sexes among them.

These nations not only resemble each other in their deformity, their dwarfishness, the colour of their hair and eyes, but they have, in a great measure, the same inclinations and the same manners, being all equally rude, superstitious, and stupid. The Danish Laplanders have a large black cat, to which they communicate their secrets, and consult in all their affairs. Among the Swedish Laplanders, there is in every family a drum for consulting the devil; and although these nations are robust and nimble,

* Crantz.

yet they are so cowardly that they never can be brought into the field. Gustavus Adolphus attempted to form a regiment of Laplanders, but he found it impossible to accomplish his design; for it should seem that they can live only in their own country, and in their own manner. They make use of skates, which are made of fir, of near three feet long, and half a foot broad; these are pointed, and raised before, and tied to the foot by straps of leather. With these they skate upon the icy snow with such velocity, that they very easily overtake the swiftest animals. They make use also of a pole, pointed with iron at one end, and rounded at the other. This pole serves to push them along, to direct their course, to support them from falling, to stop the impetuosity of their motion, and to kill that game which they have overtaken. Upon these skates they descend the steepest mountains, and scale the most craggy precipices; and in these exercises the women are not less skilful than the men. They have all the use of the bow and arrow, which seems to be a contrivance common to all barbarous nations; and which, however, at first, required no small skill to invent. They launch a javelin also with great force; and some say that they can hit a mark, no larger than a crown, at thirty yards distance, and with such force as would pierce a man through. They are all hunters; and particularly pursue the ermine, the fox, the ounce, and the martin, for the sake of their skins. These they barter with their southern neighbours for brandy and tobacco, both which they are fond of to excess. Their food is principally dried fish, the flesh of reindeer and bears. Their bread is composed of the bones of fishes, pounded and mixed with the inside tender bark of the pine tree. Their drink is train-oil and brandy, and when deprived of these, water in which juniper berries have been infused. With

regard to their morals, they have all the virtues of simplicity, and all the vices of ignorance. They offer their wives and daughters to strangers; and seem to think it a particular honour if their offer be accepted. They have no idea of religion, or a Supreme Being; the greatest number of them are idolaters; and their superstition is as profound as their worship is contemptible. Wretched and ignorant as they are, yet they do not want pride; they set themselves far above the rest of mankind; and Crantz assures us, that when the Greenlanders are got together, nothing is so customary among them as to turn the Europeans into ridicule. They are obliged, indeed, to yield them the pre-eminence in understanding and mechanic arts; but they do not know how to set any value upon these. They therefore count themselves the only civilized and well-bred people in the world; and it is common with them, when they see a quiet or a modest stranger, to say that he is almost as well-bred as a Greenlander.

From this description, therefore, this whole race of people may be considered as distinct from any other. Their long continuance in a climate the most inhospitable, their being obliged to subsist on food the most coarse and ill prepared, the savageness of their manners, and their laborious lives, all have contributed to shorten their stature, and to deform their bodies.* In proportion as we approach towards the north pole, the size of the natives appears to diminish, growing less and less as we advance higher, till we come to those latitudes that are destitute of all inhabitants whatsoever.

The wretched natives of these climates seem fitted by nature to endure the rigours of their situation. As their food is but scanty and precarious, their patience in hunger is amazing.† A man who has eaten

* Ellis's Voyage, p. 256. † Crantz, vol. i, p. 134.

nothing for four days, can manage his little canoe in the most furious waves, and calmly subsist in the midst of a tempest that would quickly dash an European boat to pieces. Their strength is not less amazing than their patience; a woman among them will carry a piece of timber, or a stone, near double the weight of what an European can lift. Their bodies are of a dark gray all over; and their faces brown, or olive. The tincture of their skins partly seems to arise from their dirty manner of living, being generally daubed with train-oil; and partly from the rigours of climate, as the sudden alterations of cold and raw air in winter, and of burning heats in summer, shade their complexions by degrees, till, in a succession of generations, they at last become almost black. As the countries in which these reside are the most barren, so the natives seem the most barbarous of any part of the earth. Their more southern neighbours of America treat them with the same scorn that a polished nation would treat a savage one; and we may readily judge of the rudeness of those manners, which even a native of Canada can think more barbarous than his own.

But the gradations of nature are imperceptible; and while the north is peopled with such miserable inhabitants, there are here and there to be found, upon the edges of these regions, people of larger stature and completer figure. A whole race of the dwarfish breed is often found to come down from the north, and settle more to the southward; and on the contrary, it sometimes happens that southern nations are seen higher up, in the midst of these diminutive tribes, where they have continued for time immemorial. Thus the Ostiac Tartars seem to be a race that have travelled down from the north, and to be originally sprung from the minue savages we have been describing. There are also Norwegians

and Finlanders, of proper stature, who are seen to inhabit in latitudes higher even than Lapland. These, however, are but accidental migrations, and serve as shades to unite the distinct varieties of mankind.

The second great variety in the human species, seems to be that of the Tartar race; from whence, probably, the little men we have been describing originally proceeded. The Tartar country, taken in general, comprehends the greatest part of Asia; and is, consequently, a general name given to a number of nations, of various forms and complexions. But however they seem to differ from each other, they agree in being very unlike the people of any other country. All these nations have the upper part of the visage very broad, and wrinkled even while yet in their youth. Their noses are short and flat, their eyes little and sunk in their heads; and, in some of them, they are seen five or six inches asunder. Their cheek bones are high, the lower part of their visage narrow, the chin long and advanced forward, their teeth of an enormous size and growing separate from each other; their eye-brows thick, large, and covering their eyes, their eye-lids thick, the face broad and flat, the complexion olive-coloured, and the hair black. They are of a middle size, extremely strong, and very robust. They have but little beard, which grows stragglingly on the chin. They have large thighs, and short legs. The ugliest of all are the Calmucks, in whose appearance there seems to be something frightful.—They all lead an erratic life, remaining under tents of hair or skins. They live upon horse-flesh and that of camels, either raw or a little sodden between the horse and the saddle. They eat also fish dried in the sun. Their most usual drink is mares' milk fermented with millet ground into meal. They all have the head shaven, except a lock of hair on the top, which they let grow

sufficiently long to form into tresses, on each side of the face. The women, who are as ugly as the men, wear their hair, which they bind up with bits of copper and other ornaments of a like nature. The majority of these nations have no religion, no settled notions of morality, no decency of behaviour. They are chiefly robbers; and the natives of Dagestan, who live near their more polished neighbours, make a traffic of Tartar slaves who have been stolen, and sell them to the Turks and the Persians. Their chief riches consist in horses, of which perhaps there are more in Tartary than in any other part of the world. The natives are taught by custom to live in the same place with their horses; they are continually employed in managing them, and at last bring them to such great obedience, that the horse seems actually to understand the rider's intention.

To this race of men, also, we must refer the Chinese and the Japanese, however different they seem in their manners and ceremonies. It is the form of the body that we are now principally considering; and there is, between these countries, a surprising resemblance. It is in general allowed, that the Chinese have broad faces, small eyes, flat noses, and scarcely any beard; that they are broad and square-shouldered, and rather less in stature than Europeans. These are marks common to them and the Tartars, and they may, therefore, be considered as being derived from the same original. "I have observed," says Chardin, "that in all the people from the east and the north of the Caspian Sea, to the peninsula of Malacca, that the lines of the face, and the formation of the visage, is the same. This has induced me to believe, that all these nations are derived from the same original, however different either their complexions or their manners may appear: for as to the complexion, that proceeds entirely from

the climate and the food; and as to the manners, these are generally the result of their different degrees of wealth or power." That they come from one stock is evident also from this, that the Tartars who settle in China quickly resemble the Chinese; and, on the contrary, the Chinese who settle in Tartary soon assume the figure and the manners of the Tartars.

The Japanese so much resemble the Chinese, that one cannot hesitate to rank them in the same class. They only differ in being rather browner, as they inhabit a more southern climate. They are, in general, described as of a brown complexion, a short stature, a broad flat face, a very little beard, and black hair. Their customs and ceremonies are nearly the same; their ideas of beauty similar; and their artificial deformities of blackening the teeth, and bandaging the feet, entirely alike in both countries. They both, therefore, proceed from the same stock; and although they differ very much from their brutal progenitors, yet they owe their civilization wholly to the mildness of the climate in which they reside, and to the peculiar fertility of the soil. To this tribe, also, we may refer the Cochin-Chinese, the Siamese, the Tonquinese, and the inhabitants of Aracan, Laos, and Pegu, who, though all differing from the Chinese, and each other, nevertheless have too strong a resemblance not to betray their common original.

Another, which makes the third variety in the human species is that of the southern Asiatics; the form of whose features and persons may be easily distinguished from those of the Tartar races. The nations that inhabit the peninsula of India seem to be the principal stock from whence the inhabitants of the islands that lie scattered in the Indian Ocean have been peopled. They are, in general, of a slender shape, with long straight black hair, and often

with Roman noses. Thus they resemble the Europeans in stature and features; but greatly differ in colour and habit of body. The Indians are of an olive colour, and, in the more southern parts, quite black; although the word Mogul, in their language, signifies a white man. The women are extremely delicate, and bathe very often; they are of an olive colour, as well as the men; their legs and thighs are long, and their bodies short, which is the opposite to what is seen among the women of Europe. They are, as I am assured, by no means so fruitful as the European women; but they feel the pains of childbirth with much less sensibility, and are generally up and well the day following. In fact, these pains seem greatest in all countries where the women are most delicate, or the constitution enfeebled by luxury or indolence. The women of savage nations seem, in a great measure, exempt from painful labours; and even the hard-working wives of the peasants among ourselves have this advantage from a life of industry, that their childbearing is less painful.—Over all India, the children arrive sooner at maturity, than with us of Europe. They often marry, and consummate, the husband at ten years old, and the wife at eight; and they frequently have children at that age. However, the women who are mothers so soon, cease bearing before they are arrived at thirty, and at that time they appear wrinkled, and seem marked with all the deformities of age. The Indians have long been remarkable for their cowardice and effeminacy; every conqueror that has attempted the invasion of their country, having succeeded. The warmth of the climate entirely influences their manners; they are slothful, submissive, and luxurious: satisfied with sensual happiness alone, they find no pleasure in thinking; and contented with slavery, they are ready to obey any master.

Many tribes among them eat nothing that has life; they are fearful of killing the meanest insect; and have even erected hospitals for the maintenance of all kinds of vermin. The Asiatic dress is a loose flowing garment, rather fitted for the purposes of peace and indolence, than of industry or war. The vigour of the Asiatics is in general conformable to their dress and nourishment. Fed upon rice, and clothed in effeminate silk vestments, their soldiers are unable to oppose the onset of an European army; and from the times of Alexander to the present day, we have scarcely any instances of their success in arms. Upon the whole, therefore, they may be considered as a feeble race of sensualists, too dull to find rapture in any pleasures, and too indolent to turn their gravity into wisdom. To this class we may refer the Persians and Arabians, and, in general, the inhabitants of the islands that lie scattered in the Indian Ocean.

The fourth striking variety in the human species, is to be found among the Negroes of Africa. This gloomy race of mankind is found to blacken all the southern parts of Africa, from eighteen degrees north of the Line, to its extreme termination at the Cape of Good Hope. I know it is said, that the Caffres, who inhabit the southern extremity of that large continent, are not to be ranked among the Negro race; however, the difference between them, in point of colour and features, is so small, that they may very easily be grouped in this general picture; and in the one or two that I have seen, I could not perceive the smallest difference. Each of the negro nations, it must be owned, differ from each other; they have their peculiar countries for beauty, like us; and different nations, as in Europe, pride themselves upon the regularity of their features. Those of Guinea, for instance, are extremely ugly, and have an insup-

portable scent; those of Mosambique are reckoned beautiful, and have no ill smell whatsoever. The Negroes in general are of a black colour, with a smooth, soft skin. This smoothness proceeds from the downy softness of the hair which grows upon it; the strength of which gives a roughness to the feel in those of a white complexion. Their skins, therefore, have a velvet smothness, and seem less braced upon the muscles than ours. The hair of their heads differs entirely from what we are accustomed to, being soft, woolly, and short. The beard also partakes of the same qualities; but in this it differs, that it soon turns gray, which the hair is seldom found to do; so that several are seen with white beards and black hair at the same time. Their eyes are generally of a deep hazel; their noses flat and short; their lips thick and tumid; and their teeth of an ivory whiteness. This their only beauty, however, is set off by the colour of their skin, the contrast between the black and white being the more observa ble. It is false to say that their features are deformed by art; since, in the Negro children born in European countries, the same deformities are seen to prevail; the same flatness in the nose, and the same prominence in the lips. They are, in general, said to be well shaped; but of such as I have seen, I never found one that might be justly called so; their legs being mostly ill formed, and commonly bending outward on the shinbone. But it is not only in those parts of their bodies that are obvious that they are disproportioned; those parts which among us are usually concealed by dress, with them are large and languid.* The women's breasts, after

* Linnæus, in prima linea sua, fœminas Africanas depingit sicut aliquid deforme in parte genitali gestantes, quod signum pudoris nuncupat. Attamen nihil differunt a nostratibus in hac parte nisi quod labia pudendæ sint aliquantulum tumidiora. In hominibus etiam penis est longior et multo laxior.

bearing one child, hang down below the navel; and it is customary with them to suckle the child at their backs, by throwing the breast over their shoulder. As their persons are thus naturally deformed, at least to our imaginations, their minds are equally incapable of strong exertions. The climate seems to relax their mental powers still more than those of the body; they are, therefore, in general, found to be stupid, indolent, and mischievous. The Arabians themselves, many colonies of whom have migrated southward into the most inland parts of Africa, seem to have degenerated from their ancestors; and, forgetting their ancient learning, and losing their beauty, they have become a race scarcely any way distinguishable from the original natives. Nor does it seem to have fared otherwise with the Portuguese, who, about two centuries ago, settled along this coast. They also are become almost as black as the Negroes; and are said, by some, to be even more barbarous.

The inhabitants of America make a fifth race, as different from all the rest in colour as they are distinct in habitation. The natives of America, (except in the northern extremity, where they resemble the Laplanders), are of a red or copper colour; and although, in the old world, different climates produce a variety of complexions and customs, the natives of the new continent seem to resemble each other in almost every respect. They are all nearly of one colour; all have black thick straight hair, and thin black beards; which, however, they take care to pluck out by the roots. They have, in general, flat noses, with high cheek-bones, and small eyes; and these deformities of nature they endeavour to increase by art; they flatten the nose, and often the whole head of their children, while the bones are yet susceptible of every impression. They paint the bo-

dy and face of various colours, and consider the hair upon any part of it, except the head, as a deformity which they are careful to eradicate. Their limbs are generally slighter made than those of the Europeans; and I am assured they are far from being so strong. All these savages seem to be cowardly; they seldom are known to face their enemies in the field, but fall upon them at an advantage; and the greatness of their fears serves to increase the rigours of their cruelty. The wants which they often sustain, make them surprisingly patient in adversity; distress, by being grown familiar, becomes less terrible; so that their patience is less the result of fortitude than of custom. They have all a serious air, although they seldom think; and, however cruel to their enemies, are kind and just to each other. In short, the customs of savage nations in every country are almost the same: a wild, independent, and precarious life, produces a peculiar train of virtues and vices; and patience and hospitality, indolence and rapacity, content and sincerity, are found not less among the natives of America, than all the barbarous nations of the globe.

The sixth and last variety of the human species, is that of the Europeans, and the nations bordering on them. In this class we may reckon the Georgians, Circassians, and Mingrelians, the inhabitants of Asia Minor, and the northern parts of Africa, together with a part of those countries which lie northwest of the Caspian Sea. The inhabitants of these countries differ a good deal from each other; but they generally agree in the colour of their bodies, the beauty of their complexions, the largeness of their limbs, and the vigour of their understandings. Those arts which might have had their invention among the other races of mankind, have come to perfection there. In barbarous countries, the inha-

bitants go either naked, or are awkwardly clothed in furs or feathers; in countries semi-barbarous, the robes are loose and flowing; but here the clothing is less made for show than expedition, and unites, as much as possible, the extremes of ornament and despatch.

To one or other of these classes we may refer the people of every country; and as each nation has been less visited by strangers, or has had less commerce with the rest of mankind, we find their persons and their manners more strongly impressed with one or other of the characters mentioned above. On the contrary in those places where trade has long flourished, or where enemies have made many incursions, the races are usually found blended, and properly fall beneath no one character. Thus in the islands of the Indian Ocean, where a trade has been carried on for time immemorial, the inhabitants appear to be a mixture of all the nations upon the earth; white, olive, brown, and black men, are all seen living together in the same city, and propagate a mixed breed, that can be referred to none of the classes into which naturalists have thought proper to divide mankind.

Of all the colours by which mankind is diversified, it is easy to perceive, that ours is not only the most beautiful to the eye, but the most advantageous. The fair complexion seems, if I may so express it, as a transparent covering to the soul; all the variations of the passions, every expression of joy or sorrow, flows to the cheek, and, without language, marks the mind. In the slightest change of health, also, the colour of the European face is the most exact index, and often teaches us to prevent those disorders that we do not as yet perceive: not but that the African black, and the Asiatic olive complexions, admit of their alterations also; but these are

neither so distinct, nor so visible, as with us; and, in some countries, the colour of the visage is never found to change, but the face continues in the same settled shade, in shame and in sickness, in anger and despair.

The colour, therefore, most natural to man, ought to be that which is most becoming; and it is found, that, in all regions, the children are born fair, or at least red, and that they grow more black or tawny as they advance in age. It should seem, consequently, that man is naturally white; since the same causes that darken the complexion in infants, may have originally operated, in slower degrees, in blackening whole nations. We could, therefore, readily account for the blackness of different nations, did we not see the Americans, who live under the Line, as well as the natives of Negroland, of a red colour, and but a very small shade darker than the natives of the nothern latitudes in the same continent. For this reason, some have sought for other causes of blackness than the climate; and have endeavoured to prove, that the blacks are a race of people bred from one man, who was marked with accidental blackness. This, however, is but mere ungrounded conjecture; and although the Americans are not so dark as the Negroes, yet we must still continue in the ancient opinion, that the deepness of the colour proceeds from the excessive heat of the climate: for if we compare the heats of Africa with those of America, we shall find they bear no proportion to each other. In America, all that part of the continent which lies under the Line is cool and pleasant, either shaded by mountains, or refreshed by breezes from the sea; but in Africa, the wide tract of country that lies under the Line, is very extensive, and the soil sandy: the reflection of the sun, therefore, from so large a surface of earth, is almost intolerable; and it

is not to be wondered at that the inhabitants should bear, in their looks, the marks of the inhospitable climate. In America, the country is but thinly inhabited, and the more torrid tracts are generally left desert by the inhabitants; for which reasons they are not so deeply tinged by the beams of the sun. But in Africa the whole face of the country is fully peopled; and the natives are obliged to endure their situation, without a power of migration. It is there, consequently, that they are in a manner tied down to feel all the severity of the heat; and their complexions take the darkest hue they are capable of receiving. We need not therefore have recourse to any imaginary propagation from persons accidentally black, since the climate is a cause obvious and sufficient to produce the effect.

In fact, if we examine the complexions of different countries, we shall find them darken in proportion to the heat of their climate, and the shades gradually to deepen as they approach the Line. Some nations, indeed, may be found not so much tinged by the sun as others, although they lie nearer the Line: But this ever proceeds from some accidental causes; either from the country lying higher, and consequently being colder, or from the natives bathing oftener, and leading a more civilized life. In general it may be asserted, that, as we approach the Line, we find the inhabitants of each country grow browner, until the colour deepens into perfect blackness. Thus, taking our standard from the whitest race of people, and beginning with our own country, which, I believe, bids fairest for the pre-eminence, we shall find the French, who are more southern, a slight shade deeper than we; going farther down, the Spaniards are browner than the French; the inhabitants of Fez darker than they; and the natives of Negroland the darkest of all. In what manner the sun

produces this effect, and how the same luminary which whitens wax and linen, should darken the human complexion, is not easy to conceive. Sir Thomas Brown first supposed that a mucous substance, which had something of a vitriolic quality, settled under the reticular membrane, and grew darker with heat. Others have supposed that the blackness lay in the epidermis, or scarf skin, which was burnt up like leather. But nothing has been satisfactorily discovered upon the subject: it is sufficient that we are assured of the fact; and that we have no doubt of the sun's tinging the complexion in proportion to its vicinity.

But we are not to suppose that the sun is the only cause of darkening the skin; the wind, extreme cold, hard labour, or coarse and sparing nourishment, are all found to contribute to this effect. We find the peasants of every country, who are most exposed to the weather, a shade darker than the higher ranks of people. The savage inhabitants of all places are exposed still more, and therefore contract a still deeper hue; and this will account for the tawny colour of the North American Indians. Although they live in a climate the same, or even more northerly than ours, yet they are found to be of complexions very different from those of Europe. But it must be considered that they live continually exposed to the sun; that they use many methods to darken their skins by art, painting them with red ochre, and anointing them with the fat of bears. Had they taken, for a succession of several generations, the same precautions to brighten their colour that an European does, it is very probable that they would in time come to have similar complexions, and perhaps dispute the prize of beauty.

The extremity of cold is not less productive of a tawny complexion than that of heat. The natives

of the arctic circle, as was observed, are all brown, and those that lie most to the north are almost entirely black. In this manner, both extremes are unfavourable to the human form and colour, and the same effects are produced under the Poles that are found at the Line.

With regard to the stature of the people of different countries, that seems chiefly to result from the nature of the food, and the quantity of the supply. Not but that the severity of heat or cold may, in some measure, diminish the growth, and produce a dwarfishness of make; but, in general, the food is the great agent in producing this effect: where that is supplied in large quantities, and where its quality is wholesome and nutrimental, the inhabitants are generally seen above the ordinary stature. On the contrary, where it is afforded in a sparing quantity, or very coarse, and void of nourishment in its kind, the inhabitants degenerate, and sink below the ordinary size of mankind. In this respect they resemble other animals, whose bodies, by proper feeding, may be greatly augmented. An ox, on the fertile plains of India, grows to a size four times as large as the diminutive animal of the same kind bred in the Alps. The horses bred in the plains are larger than those of the mountain. So it is with man: the inhabitants of the valley are usually found taller than those of the hill; the natives of the Highlands of Scotland, for instance, are short, broad, and hardy; those of the Lowlands are tall and shapely. The inhabitants of Greenland, who live upon dried fish and seals, are less than those of Gambia or Senegal, where nature supplies them with vegetable and animal abundance.

The form of the face seems rather to be the result of custom. Nations who have long considered some artificial deformity as beautiful, who have industri-

ously lessened the feet, or flattened the nose, by degrees begin to receive the impression they are taught to assume; and nature, in a course of ages, shapes itself to the constraint, and assumes hereditary deformity. We find nothing more common in births than for children to inherit sometimes even the accidental deformities of their parents. We have many instances of squinting in the father, which he received from fright, or habit, communicated to the offspring; and I myself have seen a child distinctly marked with a scar, similar to one the father had received in battle. In this manner accidental deformities may become natural ones; and by assiduity may be continued, and even increased, through successive generations. From this, therefore, may have arisen the small eyes and long ears of the Tartar and Chinese nations.. From hence originally may have come the flat noses of the blacks, and the flat heads of the American Indians.

In this slight survey, therefore, I think we may see that all the variations in the human figure, as far as they differ from our own, are produced either by the rigour of the climate, the bad quality or the scantiness of the provisions, or by the savage customs of the country. They are actual marks of the degeneracy in the human form; and we may consider the European figure and colour as standards to which to refer all other varieties, and with which to compare them. In proportion as the Tartar or American approaches nearer to European beauty, we consider the race as less degenerated; in proportion as he differs more widely, he has made greater deviations from his original form.

That we have all sprung from one common parent, we are taught, both by reason and religion, to believe; and we have good reason also to think, that the Europeans resemble him more than any of the

rest of his children. However, it must not be concealed that the olive-coloured Asiatic, and even the jet-black Negro, claim this honour of hereditary resemblance, and assert that white men are mere deviations from original perfection. Odd as this opinion may seem, they have Linnæus, the celebrated naturalist, on their side; who supposes man a native of the tropical climates, and only a sojourner more to the north. But, not to enter into a controversy upon a matter of very remote speculation, I think one argument alone will suffice to prove the contrary, and show that the white man is the original source from whence the other varieties have sprung. We have frequently seen white children produced from black parents, but have never seen a black offspring the production of two whites. From hence we may conclude, that whiteness is the colour to which mankind naturally tends; for as, in the tulip, the parent stock is known by all the artificial varieties breaking into it: so, in man, that colour must be original which never alters, and to which all the rest are accidentally seen to change. I have seen in London, at different times, two white Negroes, the issue of black parents, that served to convince me of the truth of this theory. I had before been taught to believe that the whiteness of the Negro skin was a disease, a kind of milky whiteness, that might be called rather a leprous crust than a natural complexion. I was taught to suppose, that the numberless white Negroes found in various parts of Africa, the white men that go by the name of *Chacrelas* in the East Indies, and the white Americans, near the Isthmus of Darien, in the West Indies, were all so many diseased persons, and even more deformed than the blackest of the natives. But, upon examining that Negro which was last shown in London, I found the colour to be exactly like that of an European; the

visage white and ruddy, and the lips of the proper redness. However, there were sufficient marks to convince me of its descent. The hair was white and wooly, and very unlike any thing I had seen before. The iris of the eye was yellow, inclining to red; the nose was flat, exactly resembling that of a Negro; and the lips thick and prominent. No doubt, therefore, remained of the child's having been born of Negro parents; and the person who showed it had attestations to convince the most incredulous. From this then we see that the variation of the Negro colour is into whiteness, whereas the white are never found to have a race of Negro children. Upon the whole, therefore, all those changes which the African, the Asiatic, or the American undergoes, are but accidental deformities, which a kinder climate, better nourishment, or more civilized manners, would, in a course of centuries, very probably remove.

CHAPTER II.

OF MONSTERS.

HITHERTO I have only spoken of those varieties in the human species that are common to whole nations; but there are varieties of another kind, which are only found in the individual, and being more rarely seen, are therefore called *monstrous*. If we examine into the varieties of distorted nature, there is scarcely a limb of the body, or a feature in the face, that has not suffered some reprobation, either from art or nature; being enlarged or diminished, lengthened or wrested from its due proportion. Linnæus, after having given a catalogue of monsters, particularly adds, the flat heads of Canada, the long

heads of the Chinese, and the slender waists of the women of Europe, who, by strait lacing, take such pains to destroy their health, through a mistaken desire to improve their beauty.* It belongs more to the physician than the naturalist to attend to these minute deformities; and, indeed, it is a melancholy contemplation to speculate upon a catalogue of calamities, inflicted by unpitying nature, or brought upon us by our own caprice. Some, however, are fond of such accounts; and there have been books filled with nothing else. To these, therefore, I refer the reader; who may be better pleased with accounts of men with two heads, or without any head, of children joined in the middle, of bones turned into flesh, or flesh converted into bones, than I am.† It is sufficient here to observe, that every day's experience must have shown us miserable instances of this kind, produced by nature or affection; calamities that no pity can soften, or assiduity relieve.

Passing over, therefore, every other account, I shall only mention the famous instance quoted by Father Malbranche, upon which he founds his beautiful theory of monstrous productions. A woman of Paris, the wife of a tradesman, went to see a criminal broke alive upon the wheel, at the place of public execution. She was at that time two months ad-

* Linnæi Syst. vol. i, p. 29. Monorchides ut minus fertiles.

† *Vide* Phil. Trans. passim. Miscellan. Curioss. Johan. Baptist. Wenck. Dissertatio Physica an ex virilis humani seminis cum brutali per nefarium coitum commixtione, aut vicissim ex bruti maris cum muliebri humano seminis commixtione possit verus homo generari. Vide etiam, Johnstoni Thaumatographia Naturalis. Vide Adalberti Disquisitio Physica ostenti duorum puerorum unus quorum dente aureo, alter cum capite giganteo, Biluæ spectabantur. A man without lungs and stomach; Journal des Scavans, 1672, p. 301. Another without any brain; Andreas Caroli Memorabilia. p. 167. an. 1676. Another without any head; Giornale di Roma, anno 1675, p. 26. Another without any arms; New Memoirs of Literature, vol iv, p. 446. In short, the variety of these accounts is almost infinite: and, perhaps, their use is as much circumscribed as their variety is extensive.

vanced in her pregnancy, and no way subject to any disorders to affect the child in her womb. She was, however, of a tender habit of body; and, though led by curiosity to this horrid spectacle, very easily moved to pity and compassion. She felt, therefore, all those strong emotions which so terrible a sight must naturally inspire; shuddered at every blow the criminal received, and almost swooned at his cries. Upon returning from this scene of blood, she continued for some days pensive, and her imagination still wrought upon the spectacle she had lately seen. After some time, however, she seemed perfectly recovered from her fright, and had almost forgotten her former uneasiness. When the time of her delivery approached, she seemed no ways mindful of her former terrors, nor were her pains in labour more than usual in such circumstances. But what was the amazement of her friends and assistants, when the child came into the world! It was found that every limb in its body was broken like those of the malefactor, and just in the same place. This poor infant, that had suffered the pains of life, even before its coming into the world, did not die, but lived in an hospital, in Paris, for twenty years after, a wretched instance of the supposed powers of imagination in the mother, of altering and distorting the infant in the womb. The manner in which Malbranche reasons upon this fact, is as follows: The Creator has established such a sympathy between the several parts of nature, that we are led not only to imitate each other, but also to partake in the same affections and desires. The animal spirits are thus carried to the respective parts of the body, to perform the same actions which we see others perform, to receive in some measure their wounds, and take part in their sufferings. Experience tells us, that if we look attentively on any person severely beaten

or sorely wounded, the spirits immediately flow into those parts of the body which correspond to those we see in pain. The more delicate the constitution, the more it is thus affected; the spirits making a stronger impression on the fibres of a weakly habit than of a robust one. Strong vigorous men see an execution without much concern, while women of nicer texture are struck with horror and concern. This sensibility in them must, of consequence, be communicated to all parts of their body; and, as the fibres of the child in the womb are incomparably finer than those of the mother, the course of the animal spirits must consequently produce greater alterations. Hence every stroke given to the criminal forcibly struck the imagination of the woman; and by a kind of counter stroke, the delicate tender frame of the child.

Such is the reasoning of an ingenious man upon a fact, the veracity of which many since have called in question.* They have allowed, indeed, that such a child might have been produced, but have denied the cause of its deformity. How could the imagination of the mother, say they, produce such dreadful effects upon her child? She has no communication with the infant; she scarcely touches it in any part; quite unaffected with her concerns, it sleeps in security, in a manner secluded, by a fluid in which it swims, from her that bears it. With what a variety of deformities, say they, would all mankind be marked, if all the vain and capricious desires of the mother were thus readily written upon the body of the child? Yet, notwithstanding this plausible way of reasoning, I cannot avoid giving some credit to the variety of instances I have either read or seen upon this subject. If it be a prejudice, it is as old as the days of Aristotle, and to this day

* Buffon, vol. iv, p. 9.

as strongly believed by the generality of mankind as ever. It does not admit of a reason; and indeed I can give none even why the child should in any respect resemble the father or the mother. The fact we generally find to be so. But why it should take the particular print of the father's features in the womb, is as hard to conceive, as why it should be affected by the mother's imagination. We all know what a strong effect the imagination has on those parts in particular, without being able to assign a cause how this effect is produced; and why the imagination may not produce the same effect in marking the child that it does in forming it, I see no reason. Those persons whose employment it is to rear up pigeons of different colours, can breed them, as their expression is, to a feather. In fact, by properly pairing them, they can give what colour they will to any feather, in any part of the body. Were we to reason upon this fact, what could we say? Might it not be asserted, that the egg being distinct from the body of the female, cannot be influenced by it? Might it not be plausibly said, that there is no similitude between any part of the egg and any particular feather, which we expect to propagate? and yet, for all this, the fact is known to be true, and what no speculation can invalidate. In the same manner, a thousand various instances assure us, that the child in the womb is sometimes marked by the strong affections of the mother: how this is performed, we know not; we only see the effect, without any connexion between it and the cause. The best physicians have allowed it, and have been satisfied to submit to the experience of a number of ages; but many disbelieve it, because they expect a reason for every effect. This, however, is very hard to be given, while it is very easy to appear wise by pretending incredulity.

Among the number of monsters, dwarfs and giants are usually reckoned; though not, perhaps, with the strictest propriety, since they are no way different from the rest of mankind, except in stature. It is a dispute, however, about words, and therefore scarcely worth contending about. But there is a dispute of a more curious nature on this subject; namely, whether there are races of people thus very diminutive, or vastly large; or whether they be merely accidental varieties, that now and then are seen in the country, in a few persons, whose bodies some external cause has contributed to lessen or enlarge.

With regard to men of diminutive stature, all antiquity has been unanimous in asserting their national existence. Homer was the first who has given us an account of the pigmy nation contending with the cranes; and what poetical license might be supposed to exaggerate, Athenæus has attempted seriously to confirm by historical assertion.* If we attend to these, we must believe, that in the internal parts of Africa there are whole nations of pigmy beings, not more than a foot in stature, who continually wage an unequal war with the birds and beasts that inhabit the plains in which they reside. Some of the ancients, however, and Strabo in particular, have supposed all these accounts to be fabulous; and have been more inclined to think this supposed nation of pigmies nothing more than a species of apes, well known to be numerous in that part of the world. With this opinion the moderns have all concurred; and that diminutive race which was described as human, has been long degraded into a class of animals that resemble us but very imperfectly.

The existence, therefore, of a pigmy race of mankind being founded in error, or in fable, we can ex-

* Athenæus, x,i 390.

pect to find men of diminutive stature only by accident among men of the ordinary size. Of these accidental dwarfs, every country, and almost every village, can produce numerous instances. There was a time when these unfavoured children of nature were the peculiar favourites of the great, and no prince or nobleman thought himself completely attended unless he had a dwarf among the number of his domestics. These poor little men were kept to be laughed at, or to raise the barbarous pleasure of their masters by their contrasted inferiority. Even in England, as late as the times of King James the First, the court was at one time furnished with a dwarf, a giant, and a jester: these the King often took a pleasure in opposing to each other, and often fomented quarrels among them, in order to be a concealed spectator of their animosity. It was a particular entertainment of the courtiers at that time, to see little Jeffery, for so the dwarf was called, ride round the lists, expecting his antagonist, and discovering in his actions all the marks of contemptible resolution.

It was in the same spirit that Peter of Russia, in the year 1710, celebrated a marriage of dwarfs. This monarch, though raised by his native genius far above a barbarian, was nevertheless still many degrees removed from actual refinement. His pleasures, therefore were of the vulgar kind; and this was among the number. Upon a certain day, which he had ordered to be proclaimed several months before, he invited the whole body of his courtiers, and all the foreign ambassadors, to be present at the marriage of a pigmy man and woman. The preparations for this wedding were not only very grand. but executed in a style of barbarous ridicule. He ordered that all the dwarf men and women within two hundred miles should repair to the capital, and also

insisted that they should be present at the ceremony. For this purpose he supplied them with proper vehicles; but so contrived it, that one horse was seen carrying in a dozen of them into the city at once, while the mob followed shouting and laughing from behind. Some of them were at first unwilling to obey an order which they knew was calculated to turn them into ridicule, and did not come; but he soon obliged them to obey, and, as a punishment, enjoined that they should wait upon the rest at dinner. The whole company of dwarfs amounted to seventy, besides the bride and bridegroom, who were richly adorned, and in the extremity of the fashion. For this little company in miniature, every thing was suitably provided; a low table, small plates, little glasses, and in short every thing was so fitted as if all things had been dwindled to their own standard. It was his great pleasure to see their gravity and their pride; the contention of the women for places, and the men for superiority. This point he attempted to adjust, by ordering that the most diminutive should take the lead; but this bred disputes, for none would then consent to sit foremost. All this, however, being at last settled, dancing followed the dinner, and the ball was opened with a minuet by the bridegroom, who measured exactly three feet two inches high. In the end matters were so contrived, that this little company, who met together in gloomy pride, and unwilling to be pleased, being at last familiarized to laughter joined in the diversion, and became, as the journalist has it,* extremely sprightly and entertaining.

But whatever may be the entertainment such guests might afford when united, I never found a dwarf capable of affording any when alone. I have

* Die dench wurdidge. Iwerg. Hockweit, &c. Lipsiæ, 1713, vol. viii, page 102. *seq.*

sometimes conversed with some of those that were exhibited at our fairs about town, and have ever found their intellects as contracted as their persons. They in general seemed to me to have faculties very much resembling those of children, and their desires likewise of the same kind; being diverted with the same sports, and best pleased with such companions. Of all those I have seen, which may amount to five or six, the little man whose name was Coan, that died lately at Chelsea, was the most intelligent and sprightly. I have heard him and the giant, who sung at the theatres, sustain a very ridiculous duet, to which they were taught to give great spirit. But this mirth, and seeming sagacity, were but assumed. He had, by long babit been taught to look cheerful upon the approach of company; and his conversation was but the mere etiquette of a person that had been used to receive visitors. When driven out of his walk, nothing could be more stupid or ignorant, nothing more dejected or forlorn. But we have a complete history of a dwarf, very accurately related by M. Daubenton, in his part of the Histoire Naturelle; which I will here take leave to translate.

This dwarf, whose name was Baby, was well known, having spent the greatest part of his life at Lunenville, in the palace of Stanislaus, the titular king of Poland. He was born in the village of Plaisne, in France, in the year 1741. His father and mother were peasants, both of good constitutions, and inured to a life of husbandry and labour. Baby, when born, weighed but a pound and a quarter. We are not informed of the dimensions of his body at that time; but we may conjecture they were very small, as he was presented on a plate to be baptized, and for a long time lay in a slipper. His mouth, although proportioned to the rest of his body, was not at that time large enough to take in the

nipple; and he was therefore obliged to be suckled by a she-goat that was in the house, and that served as a nurse, attending to his cries with a kind of maternal fondness. He began to articulate some words when eighteen months old; and at two years he was able to walk alone. He was then fitted with shoes, that were about an inch and a half long. He was attacked with several acute disorders; but the small-pox was the only one which left any marks behind it. Until he was six years old, he eat no other food but pulse, potatoes, and bacon. His father and mother were, from their poverty, incapable of affording him any better nourishment; and his education was little better than his food, being bred up among the rustics of the place. At six years old he was about fifteen inches high; and his whole body weighed but thirteen pounds. Notwithstanding this, he was well proportioned and handsome; his health was good, but his understanding scarcely passed the bounds of instinct. It was at that time that the king of Poland, having heard of such a curiosity, had him conveyed to Lunenville, gave him the name of *Baby*, and kept him in his palace.

Baby having thus quitted the hard condition of a peasant, to enjoy all the comforts and the conveniencies of life, seemed to receive no alteration from his new way of living, either in mind or in person: he preserved the goodness of his constitution till about the age of sixteen, but his body seemed to increase very slowly during the whole time; and his stupidity was such, that all instructions were lost in improving his understanding. He could never be brought to have any sense of religion, nor even to show the least signs of a reasoning faculty. They attempted to teach him dancing and music; but in vain; he never could make any thing of music, and as for dancing, although he beat time tolerably ex-

act, yet he could never remember the figure but while his dancing-master stood by to direct his motions. Notwithstanding a mind thus destitute of understanding was not without its passions; anger and jealousy harrassed it at times, nor was he without desires of another nature.

At the age of sixteen Baby was twenty-nine inches tall; at this he rested; but having thus arrived at his acme, the alterations of puberty, or rather, perhaps, of old age, came fast upon him. From being very beautiful, the poor little creature now became quite deformed; his strength quite forsook him; his backbone began to bend; his head hung forward; his legs grew weak; one of his shoulders turned awry; and his nose grew disproportionably large. With his strength, his natural spirits also forsook him: and, by the time he was twenty, he was grown feeble, decrepit, and marked with the strongest impressions of old age. It had been before remarked by some, that he would die of old age before he arrived at thirty; and, in fact, by the time he was twenty-two, he could scarcely walk a hundred paces, being worn with the multiplicity of his years, and bent under the burden of protracted life. In this year he died: a cold, attended with a slight fever, threw him into a kind of lethargy, which had a few momentary intervals: but he could scarcely be brought to speak. However, it is asserted, that in the five last days of his life he showed a clearer understanding than in his times of best health; but at length he died, after enduring great agonies, in the twenty-second year of his age.

Opposite to this accidental diminution of the human race, is that of its extraordinary magnitude. Concerning the reality of a nation of giants there have been many disputes among the learned. Some have affirmed the probability of such a race, and

others as warmly have denied the possibility of their existence. But it is not from any speculative reasonings upon a subject of this kind that information is to be obtained: it is not from the disputes of the scholar, but the labours of the enterprising, that we are to be instructed in this inquiry. Indeed, nothing can be more absurd than what some learned men have advanced upon this subject. It is very unlikely, says Grew, that there should either be dwarfs or giants; or if such, they cannot be fitted for the usual enjoyments of life and reason. Had man been born a dwarf, he could not have been a reasonable creature; for to that end he must have a jolt head, and then he would not have body and blood enough to supply his brain with spirits: or if he had a small head, proportionable to his body, there would not be brain enough for conducting life. But it is still worse with giants; and there could never have been a nation of such, for there would not be food enough found in any country to sustain them; or if there were beasts sufficient for this purpose, there would not be grass enough for their maintenance. But what is still more, add others, giants could never be able to support the weight of their own bodies; since a man of ten feet high must be eight times as heavy as one of the ordinary stature, whereas he has but twice the size of muscles to support such a burden, and, consequently, would be overloaded with the weight of his own body. Such are the theories upon this subject; and they require no other answer, but that experience proves them both to be false: dwarfs are found capable of life and reason; and giants are seen to carry their own bodies. We have several accounts from mariners, that a nation of giants actually exists; and mere speculation should never induce us to doubt their veracity.

Ferdinand Magellan was the first who discovered

this race of people along the coast towards the extremity of South America. Magellan was a Portuguese, of noble extraction, who having long behaved with great bravery under Albuquerque, the conqueror of India, he was treated with neglect by the court upon his return. Applying, therefore, to the king of Spain, he was intrusted with the command of five ships, to subdue the Molucca Islands, upon one of which he was slain. It was in his voyage thither that he happened to winter in St. Julian's Bay, an American harbour, forty-nine degrees south of the Line. In this desolate region, where nothing was seen but objects of terror, where neither trees nor verdure drest the face of the country, they remained for some months without seeing any human creature. They had judged the country to be utterly uninhabitable, when one day they saw approaching, as if he had been dropt from the clouds, a man of enormous stature, dancing and singing, and putting dust upon his head, as they supposed, in token of peace. This overture for friendship was, by Magellan's command, quickly answered by the rest of his men; and the giant approaching, testified every mark of astonishment and surprise. He was so tall that the Spaniards only reached his waist; his face was broad, his colour brown, and painted over with a variety of

they were intended, they instantly exerted their amazing strength, and broke them in pieces with a very easy effort. This account, with a variety of other circumstances, has been confirmed by succeeding travellers: Herrera, Sebald Wert, Oliver, Van Noort, and James le Maire, all correspond in affirming the fact, although they differ in many particulars of their respective descriptions. The last voyager we have had that has seen this enormous race, is Commodore Byron. I have talked with the person who first gave the relation of that voyage, and who was the carpenter of the Commodore's ship; he was a sensible understanding man, and I believe extremely faithful. By him therefore I was assured, in the most solemn manner, of the truth of his relation; and this account has since been confirmed by one or two publications, in all which the particulars are pretty nearly the same. One of the circumstances which most puzzled me to reconcile to probability, was that of the horses on which they are described as riding down to the shore. We know the American horse to be of European breed, and in some measure to be degenerated from the original. I was at a loss, therefore, to account how a horse of not more than fourteen hands high was capable of carrying a man of nine feet, or, in other words, an animal almost as large as itself. But the wonder will cease when we consider, that so small a beast as an ass will carry a man of ordinary size tolerably well; and the proportion between this and the former instance is nearly exact. We can no longer, therefore, refuse our assent to the existence of this gigantic race of mankind. In what manner they are propagated, or under what regulations they live, is a subject that remains for future investigation. It should appear, however, that they are a wandering nation, changing their abode with the

course of the sun, and shifting their situation for the convenience of food, climate, or pasture.*

This race of giants are described as possessed of great strength; and no doubt they must be very different from those accidental giants that are to be seen in different parts of Europe. Stature with these seems rather their infirmity than their pride; and adds to their burden, without increasing their strength. Of those I have seen, the generality were ill-formed and unheathful; weak in their persons, or incapable of exerting what strength they were possessed of. The same defects of understanding that attended those of suppressed stature, were found in those who were thus overgrown; they were heavy, phlegmatic, stupid, and inclined to sadness. Their numbers, however, are but few; and it is thus kindly ordered by Providence, that as the middle state is the best fitted for happiness, so the middle ranks of mankind are produced in the greatest variety.

However, mankind seems naturally to have a respect for men of extraordinary stature; and it has been a supposition of long standing, that our ancestors were much taller, as well as much more beautiful than we. This has been, indeed, a theme of poetical declamation from the beginning; and man was scarcely formed when he began to deplore an imaginary decay. Nothing is more natural than this progress of the mind, in looking up to antiquity with reverential wonder. Having been accustomed to compare the wisdom of our fathers with our own in early imbecility, the impression of their superiority remains when they no longer exist, and when we cease to be inferior. Thus the men of every age consider the past as wiser than the present, and the reverence seems to accumulate as our imaginations

* Later voyagers have not confirmed this account in some particulars.

ascend. For this reason, we allow remote antiquity many advantages, without disputing their title: the inhabitants of uncivilized countries represent them as taller and stronger; and the people of a more polished nation, as more healthy and more wise. Nevertheless, these attributes seem to be only the prejudices of ingenuous minds; a kind of gratitude which we hope in turn to receive from posterity. The ordinary stature of men, Mr. Derham observes, is in all probability the same now as at the beginning. The oldest measure we have of the human figure, is in the monument of Cheops, in the first pyramid of Egypt. This must have subsisted many hundred years before the time of Homer, who is the first that deplores the decay. This monument, however, scarcely exceeds the measure of our ordinary coffins; the cavity is no more than six feet long, two feet wide, and deep in about the same proportion. Several mummies also, of a very early age, are found to be only of the ordinary stature; and show that for these three thousand years, at least, men have not suffered the least diminution. We have many corroborating proofs of this, in the ancient pieces of armour which are dug up in different parts of Europe. The brass helmet dug up at Medauro fits one of our men, and yet is allowed to have been left there at the overthrow of Asdrubal. Some of our finest antique statues, which we learn from Pliny and others to be exactly as big as the life, still continue to this day, remaining monuments of the superior excellence of their workmen indeed, but not of the superiority of their stature. We may conclude, therefore, that men have been in all ages pretty much of the same size they are at present; and that the only difference must have been accidental, or perhaps national.

As to the superior beauty of our ancestors, it is

not easy to make the comparison: beauty seems a very uncertain charm, and frequently is less in the object than in the eye of the beholder. Were a modern lady's face formed exactly like the Venus of Medicis, or the sleeping vestal, she would scarcely be considered beautiful, except by the lovers of antiquity, whom, of all her admirers, perhaps, she would be least desirous of pleasing. It is true, that we have some disorders among us that disfigure the features, and from which the ancients were exempt; but it is equally true, that we want some which were common among them, and which were equally deforming. As for their intellectual powers, these also were probably the same as ours: we excel them in the sciences, which may be considered as a history of accumulated experience; and they excel us in the poetic arts, as they had the first rifling of all the striking images of nature.

CHAPTER III.

OF MUMMIES, WAX-WORKS, &c.

"MAN* is not content with the usual term of life, but he is willing to lengthen out his existence by art; and although he cannot prevent death, he tries to obviate his dissolution. It is natural to attempt to preserve even the most trifling relics of what has long given us pleasure; nor does the mind separate from the body without a wish, that even the wretched heap of dust it leaves behind may yet be remembered. The embalming practised in various nations,

* This chapter I have, in a great measure, translated from M. Daubenton. Whatever is added from others, is marked with inverted commas.

probably had its rise in this fond desire: an urn filled with ashes, among the Romans, served as a pledge of continuing affection; and even the grassy graves in our own church-yards are raised above the surface, with the desire that the body below should not be wholly forgotten. The soul, ardent after eternity for itself, is willing to procure, even for the body, a prolonged duration."

But of all nations the Egyptians carried this art to the highest perfection: as it was a principle of their religion to suppose the soul continued only coeval to the duration of the body, they tried every art to extend the life of the one, by preventing the dissolution of the other. In this practice they were exercised from the earliest ages; and the mummies they have embalmed in this manner continue in great numbers to the present day. We are told, in Genesis, that Joseph seeing his father expire, gave orders to his physicians to embalm the body, which they executed in the compass of forty days, the usual time of embalming. Herodotus also, the most ancient of the profane historians, gives us a copious detail of this art, as it was practised in his time among the Egyptians. There are certain men among them, says he, who practise embalming as a trade, which they perform with all expedition possible. In the first place they draw out the brain through the nostrils, with irons adapted to this purpose; and in proportion as they evacuate it in this manner, they fill up the cavity with aromatics; they next cut open the belly, near the sides, with a sharpened stone, and take out the entrails, which they cleanse, and wash in palm-oil: having performed this operation, they roll them in aromatic powder, fill them with myrrh, cassia, and other perfumes, except incense; and replace them, sewing up the body again. After these precautions they salt the body with nitre, and

keep it in the salting place for seventy days, it not being permitted to preserve it so any longer. When the seventy days are accomplished, and the body washed once more, they swathe it in bands made of linen, which have been dipt in a gum the Egyptians use instead of salt. When the friends have taken back the body, they make a hollow trough, something like the shape of a man, in which they place the body; and this they enclose in a box, preserving the whole as a most precious relic, placed against the wall. Such are the ceremonies used with regard to the rich; as for those who are contented with a humbler preparation, they treat them as follows: They fill a syringe with an odoriferous liquor extracted from the cedar tree, and, without making an incision, inject it up the body of the deceased, and then keep it in nitre, as long as in the former case. When the time is expired, they evacuate the body of the cedar liquor which had been injected; and such is the effect of this operation, that the liquor dissolves the intestines, and brings them away: the nitre also serves to eat away the flesh, and leaves only the skin and the bones remaining. This done, the body is returned to the friends, and the embalmer takes no farther trouble about it. The third method of embalming those of the meanest condition, is merely by purging and cleansing the intestines by frequent injections, and preserving the body for a similar term in nitre, at the end of which it is restored to the relations.

Diodorus Siculus also makes mention of the manner in which these embalmings are performed. According to him there were several officers appointed for this purpose; the first of them, who was called the scribe, marked those parts of the body, on the left side, which were to be opened; the cutter made the incision; and one of those that were to salt it, drew

out all the bowels, except the heart and the kidneys; another washed them in palm-wine, and odoriferous liquors; afterwards they annointed, for above thirty days, with cedar, gum, myrrh, cinnamon, and other perfumes. These aromatics preserved the body entire for a long time, and gave it a very agreeable odour. It was not in the least disfigured by this preparation; after which it was returned to the relations, who kept it in a coffin placed upright against the wall.

Most of the modern writers who have treated on this subject have merely repeated what has been said by Herodotus; and if they add any thing of their own, it is but merely from conjecture. Dumont observes, that it is very probable that aloes, bitumen, and cinnamon, make a principal part of the composition which is used on this occasion; he adds, that after embalming, the body is put into a coffin made of the sycamore tree, which is almost incorruptible. Mr. Grew remarks, that in an Egyptian mummy in the possession of the Royal Society, the preparation was so penetrating as to enter into the very substance of the bones, and rendered them so black, that they seemed to have been burnt. From this he is induced to believe, that the Egyptians had a custom of embalming their dead, by boiling them in a kind of liquid preparation, until all the aqueous parts of the body were exhaled away, and until the oily or gummy matter had penetrated throughout. He proposes, in consequence of this, a method of macerating, and afterwards of boiling the dead body in oil of walnut.

I am, for my own part, of opinion, that there were several ways of preserving dead bodies from putrefaction; and that this would not be difficult, since different nations have all succeeded in the attempt. We have an example of this kind among the Guanches,

the ancient inhabitants of the island of Teneriffe. Those who survived the general destruction of this people by the Spaniards, when they conquered this island, informed them, that the art of embalming was still preserved there; and that there was a tribe of priests among them possessed of the secret, which they kept concealed as a sacred mystery. As the greatest part of the nation was destroyed, the Spaniards could not arrive at a complete knowledge of this art; they only found out a few of the particulars. Having taken out the bowels, they washed the body several times in a ley made of the dried bark of the pine tree, warmed during the summer by the sun, or by a stove in the winter They afterwards annointed it with butter, or the fat of bears, which they had previously boiled with odoriferous herbs, such as sage and lavender. After this unction, they suffered the body to dry, and then repeated the operation as often as it was necessary, until the whole substance was impregnated with the preparation.—When it was become very light, it was then a certain sign that it was right, and properly prepared. They then rolled it up in the dried skins of goats, which, when they had a mind to save expense, they suffered to remain with the hair still growing upon them. Purchas assures us, that he has seen mummies of this kind in London; and mentions the name of a gentleman who had seen several of them in the island of Teneriffe, which were supposed to have been two thousand years old, but without any certain proofs of such great antiquity. This people, who probably came first from the coasts of Africa, might have learned this art from the Egyptians, as there was a traffic carried on from thence into the most internal parts of Africa.

Father Acosta and Garcilasso de la Vega make no doubt but that the Peruvians understood the art

of preserving their dead for a very long space of time. They assert their having seen the bodies of several Incas, that were perfectly preserved. They still preserved their hair and their eye-brows; but they had eyes made of gold put in the places of those taken out. They were clothed in their usual habits, and seated in the manner of the Indians, their arms placed on their breasts. Garcilasso touched one of their fingers, and found it apparently as hard as wood; and the whole body was not heavy enough to overburden a weak man, who should attempt to carry it away. Acosta presumes that these bodies were embalmed with bitumen, of which the Indians knew the properties. Garcilasso, however, is of a different opinion, as he saw nothing bituminous about them; but he confesses that he did not examine them very particularly; and he regrets his not having inquired into the methods used for that purpose. He adds, that being a Peruvian, his countrymen would not have scrupled to inform him of the secret, if they really had it still among them.

Garcilasso, thus being ignorant of the secret, makes use of some inductions to throw light upon the subject. He asserts, that the air is so dry and so cold at Cusco, that flesh dries there like wood, without corrupting; and he is of opinion, that they dried the body in snow, before they applied the bitumen. He adds, that in the time of the Incas they usually dried the flesh which was designed for the use of the army; and that when they had lost their humidity, they might be kept without salt, or any other preparation.

It is said, that at Spitzbergen, which lies within the Arctic circle, and, consequently, in the coldest climate, bodies never corrupt, nor suffer any apparent alteration, even though buried for thirty years. Nothing corrupts or putrifies in that climate; the

wood which has been employed in building those houses where the train oil is separated, appears as fresh as the day it was first cut.

If excessive cold, therefore, be thus capable of preserving bodies from corruption, it is not less certain that a great degree of dryness, produced by heat, produces the same effect. It is well known, that the men and animals that are buried in the sands of Arabia, quickly dry up, and continue in preservation for several ages, as if they had been actually embalmed. It has often happened, that whole caravans have perished in crossing those deserts, either by the burning winds that infest them, or by the sands which are raised by the tempest, and overwhelm every creature in certain ruin. The bodies of those persons are preserved entire; and they are often found in this condition by some accidental passenger. Many authors, both ancient and modern, make mention of such mummies as these; and Shaw says, that he has been assured that numbers of men, as well as other animals, have been thus preserved, for times immemorial, in the burning sands of Saibah, which is a place, he supposes, situate between Rasem and Egypt.

The corruption of dead bodies being entirely caused by the fermentation of the humours, whatever is capable of hindering or retarding this fermentation will contribute to their preservation. Both heat and cold, though so contrary in themselves, produce similar effects in this particular, by drying up the humours. The cold, in condensing and thickening them, and the heat, in evaporating them before they have time to act upon the solids. But it is necessary that these extremes should be constant; for if they succeed each other, so as that cold should follow heat, or dryness humidity, it must then necessarily happen, that corruption must ensue. However, in

temperate climates there are natural causes capable of preserving dead bodies; among which we may reckon the qualities of the earth in which they are buried. If the earth be drying and astringent, it will imbibe the humidity of the body; and it may be probably for this reason that the bodies buried in the monastery of the Cordeliers at Thoulouse, do not putrefy, but dry in such a manner that they may be lifted up by one arm.

The gums, resins, and bitumens, with which dead bodies are embalmed, keep off the impressions which they would else receive from the alteration of the temperature of the air; and still more, if a body thus prepared be placed in a dry or burning sand, the most powerful means will be united for its preservation. We are not to be surprised, therefore, at what we are told by Chardin, of the country of Chorosan in Persia. The bodies which have been previously embalmed, and buried in the sands of that country, as he assures us, are found to petrify, or, in other words, to become extremely hard, and are preserved for several ages. It is asserted, that some of them have continued for a thousand years.

The Egyptians as has been mentioned above, swathed the body with linen bands, and enclosed it in a coffin; however, it is probable that, with all these precautions, they would not have continued till now, if the tombs, or pits, in which they were placed had not been dug in a dry chalky soil, which was not susceptible of humidity, and which was, besides, covered over with a dry sand of several feet in thickness.

The sepulchres of the ancient Egyptians subsist to this day. Most travellers who have been in Egypt have described those of ancient Memphis, and have seen the mummies interred there. These catacombs are within two leagues of the ruins of this city, nine

leagues from Grand Cairo, and about two miles from the village of Zaccara. They extend from thence to the pyramids of Pharaoh, which are about eight miles distant. These sepulchres lie in a field, covered with a fine running sand of a yellowish colour. The country is dry and hilly; the entrance of the tombs is choked up with sand; there are many open but several more that are still concealed. The inhabitants of the neighbouring village have no other commerce, or method of subsisting, but by seeking out mummies, and selling them to such strangers as happen to be at Grand Cairo. "This commerce, some years ago, was not only a very common, but a very gainful one. A complete mummy was often sold for twenty pounds: but it must not be supposed that it was bought at such a high price from a mere passion for antiquity; there were much more powerful motives for this traffic. Mummy, at that time, made a considerable article in medicine; and a thousand imaginary virtues were ascribed to it, for the cure of most disorders, particularly of the paralytic kind. There was no shop, therefore, without mummy in it; and no physician thought he had properly treated his patient, without adding this to his prescription. Induced by the general repute in which this supposed drug was at that time, several Jews, both of Italy and France, found out the art of imitating mummy so exactly, that they for a long time deceived all Europe. This they did by drying dead bodies in ovens, after having prepared them with myrrh, aloes, and bitumen. Still, however, the request for mummies continued, and a variety of cures were daily ascribed to them. At length Paræus wrote a treatise on their total inefficacy in physic, and showed their abuse in loading the stomach, to the exclusion of more efficacious medicines. From that time, therefore, their reputation began to decline;

the Jews discontinued their counterfeits, and the trade returned entire to the Egyptians, when it was no longer of value. The industry of seeking after mummies is now totally relaxed, their price merely arbitrary, and just what the curious are willing to give."

In seeking for mummies, they first clear away the sand, which they may do for weeks together, without finding what is wanted. Upon coming to a little square opening, of about eighteen feet in depth, they descend into it, by holes for the feet, placed at proper intervals; and there they are sure of finding what they seek for. These caves, or wells, as they call them, are hollowed out of a white free-stone, which is found in all this country a few feet below the covering of sand. When one gets to the bottom of these, which are sometimes forty feet below the surface, there are several square openings, on each side, into passages of ten or fifteen feet wide, and these lead to chambers of fifteen or twenty feet square. These are all hewn out of the rock; and in each of the catacombs are to be found several of these apartments, communicating with each other. They extend a great way under ground, so as to be under the city of Memphis, and in a manner to undermine its environs.

In some of the chambers, the walls are adorned with figures and hieroglyphics; in others, the mummies are found in tombs round the apartment, hollowed out in the rock. These tombs are upright, and cut into the shape of a man, with his arms stretched out. There are others found, and these in the greatest number, in wooden coffins, or in clothes covered with bitumen. These coffins or wrappers, are covered all over with a variety of ornaments. There are some of them painted, and adorned with figures, such as that of death, and with leaden seals,

on which several characters are engraven. Some of these coffins are carved into the human shape; but the head alone is distinguishable; the rest of the body is all of a piece, and terminated by a pedestal; while there are some with their arms hanging down, and it is by these marks that the bodies of persons of rank are distinguished from those of the meaner order. These are generally found lying on the floor, without any profusion of ornaments; and in some chambers the mummies are found indiscriminately piled upon each other and buried in the sand.

Many mummies are found lying on their backs; their heads turned to the north, and their hands placed on the belly. The bands of linen with which these are swathed are found to be more than a thousand yards long; and, of consequence, the number of circumvolutions they make about the body must have been amazing. These were performed by beginning at the head, and ending at the feet; but they contrived it so as to avoid covering the face. However, when the face is entirely uncovered, it moulders into dust immediately upon the admission of the air. When, therefore, it is preserved entire, a slight covering of cloth is so disposed over it, as that the shape of the eyes, the nose and the mouth are seen under it. Some mummies have been found with a long beard, and hair that reached down to the mid-leg, nails of a surprising length, and some gilt, or at least painted of a gold colour. Some are found with bands upon the breast, covered with hieroglyphics, in gold, silver, or in green; and some with tutelary idols, and other figures of jasper, within their body. A piece of gold, also, has often been found under their tongues of about two pistoles value; and, for this reason, the Arabians spoil all the mummies they meet with, in order to get at the gold.

But though art, or accident, has thus been found

to preserve dead bodies entire, it must by no means be supposed that it is capable of preserving the exact form and lineaments of the deceased person. Those bodies which are found dried away in the deserts, or in some particular church-yards, are totally deformed, and scarcely any lineaments remain of their external structure. Nor are the mummies preserved by embalming in a better condition. The flesh is dried away, hardened, and hidden under a variety of bandages; the bowels, as we have seen, are totally removed; and from hence, in the most perfect of them, we see only a shapeless mass of skin discoloured, and even the features scarcely distinguishable. The art is, therefore, an effort rather of preserving the substance than the likeness of the deceased; and has, consequently, not been brought to its highest pitch of perfection. It appears from a mummy not long since dug up in France, that the art of embalming was more completely understood in the western world than even in Egypt. This mummy, which was dug up at Auvergne, was an amazing instance of their skill, and is one of the most curious reliques in the art of preservation. As some peasants in that part of the world were digging in a field near Rion, within about twenty-six paces of the highway, between that and the river Artier, they discovered a tomb, about a foot and a half beneath the surface. It was composed only of two stones; one of which formed the body of the sepulchre, and the other the cover. This tomb was of free-stone; seven feet and a half long, three feet and a half broad, and about three feet high. It was of rude workmanship; the cover had been polished, but was without figure or inscription; within this tomb was placed a leaden coffin, four feet seven inches long, fourteen inches broad, and fifteen high. It was not made coffin fashion, but oblong, like a

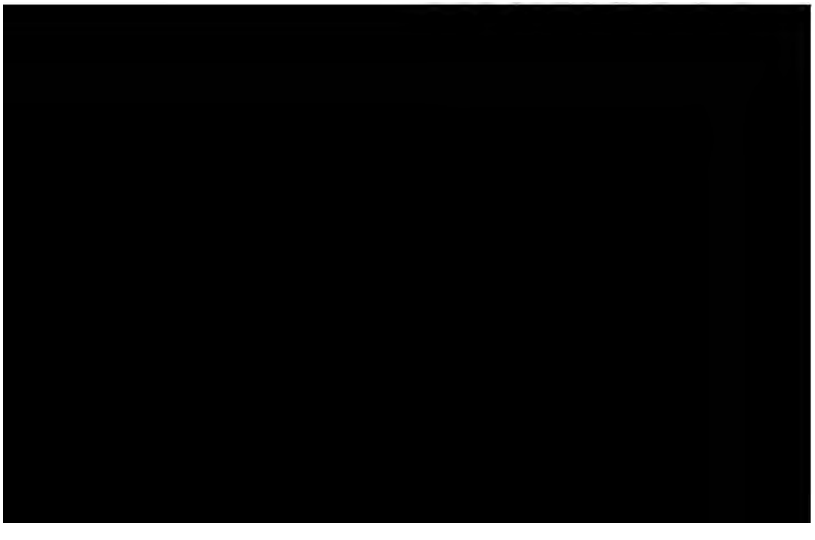
box, equally broad at both ends, and covered with a lid that fitted on like a snuff-box, without a hinge. This cover had two holes in it, each of about two inches long, and very narrow, filled with a substance resembling butter; but for what purpose intended remains unknown. Within this coffin was a mummy, in the highest and most perfect preservation. The internal sides of the coffin were filled with an aromatic substance mingled with clay. Round the mummy was wrapped a coarse cloth, in form of a napkin; under this were two shirts or shrouds, of the most exquisite texture; beneath these a bandage, which covered all parts of the body, like an infant in swaddling clothes, still under this general bandage there was another, which went particularly round the extremities, the hands and the legs: The head was covered with two caps; the feet and hands were without any particular bandages; and the whole body was covered with an aromatic substance, an inch thick. When these were removed, and the body exposed naked to view, nothing could be more astonishing than the preservation of the whole, and the exact resemblance it bore to a body that had been dead a day or two before. It appeared well proportioned, except that the head was rather large, and the feet small. The skin had all the pliancy and colour of a body lately dead; the visage, however, was of a brownish hue. The belly yielded to the touch; all the joints were flexible, except those of the legs and feet; the fingers stretched forth of themselves when bent inwards. The nails still continued entire; and all the marks of the joints, both in the fingers, the palms of the hands, and the soles of the feet remained perfectly visible. The bones of the arms and legs were soft and pliant; but on the contrary, those of the skull preserved their rigidity; the hair which only covered the back of the

head, was of a chesnut colour, and about two inches long. The pericranium at top was separated from the skull, by an incision, in order to open it for the introducing proper aromatics in the place of the brain, where they were found mixed with clay. The teeth, the tongue, and the ears, were all preserved in perfect form. The intestines were not taken out of the body, but remained pliant and entire, as in a fresh subject; and the breast was made to rise and fall like a pair of bellows; the embalming preparation had a very strong and pungent smell, which the body preserved for more than a month after it was exposed to the air. This odour was perceived wherever the mummy was laid, although it remained there but a very short time; it was even pretended that the peasants of the neighbouring villages were incommoded by it. If one touched either the mummy, or any part of the preparation, the hands smelled of it for several hours after, although washed with water, spirit of wine, or vinegar. This mummy having remained exposed for some months to the curiosity of the public, began to suffer some mutilations. A part of the skin of the forehead was cut off; the teeth were drawn out, and some attempts were made to pull away the tongue. It was therefore put into a glass case, and shortly after transmitted to the king of France's cabinet, at Paris.

There are many reasons to believe this to be the body of a person of the highest distinction; however, no marks remain to assure us either of the quality of the person, or the time of his decease. There only are to be seen some irregular figures on the coffin; one of which represents a kind of star. There were also some singular characters upon the bandages, which were totally defaced by those who had torn them away. However, it should seem that it had remained for several ages in this state, since

the first years immediately succeeding the interment, are usually those in which the body is most liable to decay. It appears also to be a much more perfect method of embalming than that of the Egyptians; as in this the flesh continues with its natural elasticity and colour, the bowels remain entire, and the joints have almost the pliancy which they had when the person was alive. Upon the whole, it is is probable that a much less tedious preparation than that used by the Egyptians would have sufficed to keep the body from putrefaction; and that an injection of petreoleum inwardly, and a layer of asphaltum without, would have sufficed to have made a mummy; and it is remarkable that Auvergne, where this was found, affords these two substances in sufficient plenty. This art, therefore, might be brought to greater perfection than it has arrived at hitherto, were the art worth preserving. But mankind have long since grown wiser in this respect, and think it unnecessary to keep by them a deformed carcass, which, instead of aiding their magnificence, must only serve to mortify their pride.

CHAPTER IV.



kinds; but almost every vegetable, every leaf, has millions of minute inhabitants, each of which fills up the circle of its allotted life; and some of them are found objects of the greatest curiosity. In this seeming exuberance of animals, it is natural for ignorance to lie down in hopeless uncertainty, and to declare what requires labour to particularize to be utterly inscrutable. It is otherwise, however, with the active and searching mind: no way intimidated with the immense variety, it begins the task of numbering, grouping, and classing all the various kinds that fall within its notice; finds every day new relations between the several parts of the creation, acquires the art of considering several at a time under one point of view; and at last begins to find, that the variety is neither so great nor so inscrutable as was at first imagined. As, in a clear night, the number of the stars seems infinite, yet, if we sedulously attend to each in its place, and regularly class them, they will soon be found to diminish, and come within a very scanty computation.

Method is one of the principal helps in natural history, and without it very little progress can be made in this science. It is by that alone we can hope to dissipate the glare, if I may so express it, which arises from a multiplicity of objects at once presenting themselves to the view. It is method that fixes the attention to one point, and leads it, by slow and certain degrees, to leave no part of nature unobserved.

All naturalists, therefore, have been very careful in adopting some method of classing or grouping the several parts of nature; and some have written books of natural history with no other view. These methodical divisions some have treated with contempt,* not considering that books in general are written

* M. Buffon in his Introduction, &c.

with opposite views—some to be read, and some only to be occasionally consulted. The methodists in natural history seem to be content with the latter advantage, and have sacrificed to order alone all the delights of the subject, all the arts of heightening, awakening, or continuing curiosity. But they certainly have the same use in science that a dictionary has in language; but with this difference, that in a dictionary we proceed from the name to the definition; in a system of natural history, we proceed from the definition to find out the thing. Without the aid of system, nature must still have lain undistinguished, like furniture in a lumber room; every thing we wish for is there, indeed, but we know not where to find it. If, for instance, in a morning excursion, I find a plant, or an insect, the name of which I desire to learn, or perhaps am curious to know whether already known; in this inquiry I can expect information only from one of these systems, which, being couched in a methodical form quickly directs me to what I seek for. Thus we will suppose that our inquirer has met with a spider, and that he has never seen such an insect before. He is taught by the writer of a system* to examine whether it has wings, and he finds that it has none; he therefore is to look for it among the wingless insects, or the Aptera, as Linnæus calls them: he then is to see whether the head and breast make one part of the body, or are disunited; he finds they make one: he is then to reckon the number of feet and eyes; and he finds that it has eight of each. The insect, therefore, must be either a scorpion or a spider; but he lastly examines its feelers, which he finds clavated or clubbed: and by all these marks he at last discovers it to be a spider. Of spiders there are above forty sorts; and by reading the description of each, the in-

* Linnæus.

quirer will learn the name of that which he desires to know. With the name of the insect, he is also directed to those authors that have given any account of it, and the page where that account is to be found; by this means he may know at once what has been said of that animal by others, and what there is of novelty in the result of his own researches.

From hence it will appear how useful those systems in natural history are to the inquirer; but having given them all their merit, it would be wrong not to observe, that they have in general been very much abused. Their authors, in general, seem to think that they are improvers of natural history, when in reality they are but guides; they seem to boast that they are adding to our knowledge, while they are only arranging it. These authors also seem to think, that the reading of their works and systems is the best method to attain a knowledge of nature. But setting aside the impossibility of getting through whole volumes of a dry long catalogue, the multiplicity of whose contents is too great for even the strongest memory, such works rather tell us the names than the history of the creatures we desire to inquire after. In these dreary pages, every insect or plant that has a name makes as distinguished a figure as the most wonderful or the most useful. The true end of studying nature is to make a just selection, to find those parts of it that most conduce to our pleasure or convenience, and to leave the rest in neglect. But these systems, employing the same degree of attention upon all, give us no opportunities of knowing which most deserves attention; and he who has made his knowledge from such systems only, has his memory crowded with a number of trifling or minute particulars, which it should be his business and his labour to forget. These books, as was said before, are useful to be consulted, but they

are very unnecessary to be read; no inquirer into nature should be without any of them, and without any doubt, Linnæus deserves the preference.

One fault more in almost all these systematic writers, and that which leads me to the subject of the present chapter, is, that seeing the necessity of methodical distribution in some parts of nature, they have introduced it into all. Finding the utility of arranging plants, birds, or insects, they have arranged quadrupeds also with the same assiduity; and although the number of these is so few as not to exceed two hundred, they have darkened the subject with distinctions and divisions, which only serve to puzzle and perplex. All method is only useful in giving perspicuity where the subject is either dark or copious: but with regard to quadrupeds, the number is but few; many of them we are well acquainted with by habit, and the rest may very readily be known without any method. In treating of such, therefore, it would be useless to confound the reader with a multiplicity of divisions; as quadrupeds are conspicuous enough to obtain the second rank in nature, it becomes us to be acquainted with at least the names of them all. However, as there are naturalists who have gained a name from the excellence of their methods in classing these animals, some readers may desire to have a knowledge of what has been laboriously invented for their instruction. I will just take leave, therefore, to mention the most applauded methods of classing animals, as adopted by Ray, Klein, and Linnæus; for it often happens, that the terms which have been long used in a science, though frivolous, become by prescription a part of the science itself.

Ray, after Aristotle, divides all animals into two kinds; those which have blood, and those which are bloodless. In the last class he places all the insect

tribes. The former he divides into such as breathe through the lungs, and such as breathe through gills: these last comprehend the fishes. In those which breathe through the lungs, some have the heart composed of two ventricles, and some have it of one. Of the last are all animals of the cetaceous kind, all oviparous quadrupeds, and serpents. Of those that have two ventricles, some are oviparous, which are the birds; and some viviparous, which are quadrupeds. The quadrupeds he divides into such as have a hoof, and such as are claw-footed. Those with the hoof he divides into such as have it undivided, such as have it cloven, and such as have the hoof divided into more parts, as the rhinoceros and hippopotamus. Animals with the cloven hoof he divides into such as chew the cud, as the cow and the sheep; and such as are not ruminant, as the hog. He divides those animals that chew the cud into four kinds: the first have hollow horns, which they never shed, as the cow; the second is of a less species, and is of the sheep kind; the third is of the goat kind; and the last, which have solid horns, and shed them annually, are of the deer kind. Coming to the claw-footed animals, he finds some with large claws, resembling the fingers of the human hand; and these he makes the ape kind. Of the others, some have the foot divided in two, and have a claw to each division; these are the camel kind. The elephant makes a kind by itself, as its claws are covered over by a skin. The rest of the numerous tribe of claw-footed animals he divides into two kinds; the analogous, or such as resemble each other; and the anomalous, which differ from the rest. The analogous claw-footed animals are of two kinds; they have more than two cutting teeth in each jaw, such as the lion and the dog, which are carnivorous; or they have but two cutting teeth in each jaw, and

these are chiefly fed upon vegetables. The carnivorous kinds are divided into the great and the little. The great carnivorous animals are divided into such as have a short snout, as the cat and the lion; and such as have it long and pointed, as the dog and the wolf. The little claw-footed carnivorous animals differ from the great, in having a proportionably smaller head, and a slender body, that fits them for creeping into holes in pursuit of their prey, like worms; and they are therefore called the vermin kind.

We see from this sketch of division and subdivision, how a subject, extremely delightful and amusing in itself, may be darkened, and rendered disgusting. But, notwithstanding, Ray seems to be one of the most simple distributors; and his method is still, and not without reason, adopted by many. Such as have been at the trouble to learn this method, will certainly find it useful; nor would we be thought in the least to take from its merits; all we contend for is, that the same information may be obtained by a pleasanter and an easier method.

It was the great success of Ray's method that soon after produced such a variety of attempts in the same manner; but almost all less simple, and more obscure. M. Klein's method is briefly as follows:

of four feet upon land, he divides into two orders; the first are the hoofed kind, and the second the claw kind. Each of these orders is divided into four families. The first family of the hoofed kind are the single hoofed, such as the horse, ass, &c. The second family are such as have the hoof cloven into two parts, such as the cow, &c. The third family have the hoof divided into three parts, and in this family is found only the rhinoceros. The fourth family have the hoof divided into five parts, and in this is only to be found the elephant. With respect to the clawed kind, the first family comprehends those that have but two claws on each foot, as the camel; the second family have three claws; the third, four; and the fourth, five. This method of taking the distinctions of animals from the organs of motion, is ingenious, but it is at the same time incomplete; and, besides the divisions into which it must necessarily fall, is inadequate; since, for instance, in his family with two claws, there is but one animal; whereas, in his family with five claws, there are above a hundred.

Brisson, who has laboured this subject with great accuracy, divides animated nature into nine classes: namely, quadrupeds; cetaceous animals, or those of the whale kind; birds; reptiles, or those of the serpent kind; cartilaginous fishes; spinous fishes; shelled animals; insects; and worms. He divides the quadrupeds into eighteen orders, and takes their distinctions from the number and form of their teeth.

But of all those whose systems have been adopted and admired, Linnæus is the foremost; as, with a studied brevity, his system comprehends the greatest variety in the smallest space.

According to him, the first distinction of animals is to be taken from their internal structure. Some have the heart with two ventricles, and hot red blood;

the distinctions between these classes are sufficiently marked, and their encroachments upon each other are so rare, that it will be sufficient particularly to apprize the reader when they happen to be blended.

There are many quadrupeds that we are well acquainted with; and of those we do not know we shall form the most clear and distinct conceptions, by being told wherein they differ, and wherein they resemble those with which we are familiar. Each class of quadrupeds may be ranged under some one of the domestic kinds; that may serve for the model by which we are to form some kind of idea of the rest. Thus we may say that a tiger is of the cat kind, a wolf of the dog kind, because there are some rude resemblances between each; and a person who has never seen the wild animals, will have some incomplete knowledge of their figure from the tame ones. On the contrary, I will not, as some systematic writers have done,* say that a bat is of the human kind, or a hog of the horse kind, merely because there is some resemblance in their teeth, or their paps. For, although this resemblance may be striking enough, yet a person who has never seen a bat or a hog, will never form any just conception of either by being told of this minute similitude. In short, the method in classing quadrupeds should be

tains the Horse, the Ass, and the Zebra. Of these, none have horns; and their hoof is of one solid piece.

The second class is that of the Cow kind; comprehending the Urus, the Buffalo, the Bison, and the Bonassus. These have cloven hoofs, and chew the cud.

The third class is that of the Sheep kind, with cloven hoofs, and chewing the cud like the former. In this is comprehended the Sheep, the Goat, the Lama, the Vigogne, the Gazelle, the Guinea-deer, and all of a similar form.

The fourth class is that of the Deer kind, with cloven hoofs, and with solid horns that are shed every year. This class contains the Elk, the Reindeer, the Stag, the Buck, the Roebuck, and the Axis.

The fifth class comprehends all those of the Hog kind, the Peccary, and the Babyrouessa.

The sixth class is that numerous one of the Cat kind. This comprehends the Cat, the Lion, the Panther, the Leopard, the Jaguar, the Couguar, the Jaguarette, the Lynx, the Ounce, and the Catamountain. These are all carnivorous, and furnished with crooked claws, which they can sheath and unsheath at pleasure.

The seventh class is that of the Dog kind, carnivorous, and furnished with claws like the former, but which they cannot sheath. This class comprehends the Dog, the Wolf, the Fox, the Jackall, the Isatis, the Hyæna, the Civet, the Gibet, and the Genet.

The eighth class is that of the Weasel kind, with a long small body, with five toes, or claws on each foot, the first of them separated from the rest like a thumb. This comprehends the Weasel, the Martin, the Polecat, the Ferret, the Mangoust, the Vansire, the Ermine, with all the varieties of the American Moufettes.

The ninth class is that of the Rabbit kind, with

two large cutting teeth in each jaw. This comprehends, the Rabbit, the Hare, the Guinea-pig, all the various species of the Squirrel, the Dormouse, the Marmot, the Rat, the Mouse, the Agouti, the Paca, the Aperea, and the Tapeti.

The tenth class is that of the Hedgehog kind, with claw feet, and covered with prickles, comprehending the Hedgehog and the Porcupine, the Couanda, and the Urson.

The eleventh class is that of the Tortoise kind, covered with a shell or scales. This comprehends the Tortoise, the Pangolin, and the Phatagin.

The twelfth is that of the Otter, or amphibious kind, comprehending the Otter, the Beaver, the Desman, the Morse, and the Seal.

The thirteenth class is that of the Ape and Monkey kinds, with hands, and feet resembling hands.

The fourteenth class is that of winged quadrupeds, or the Bat kind, containing the Bat, the flying Squirrel, and some other varieties.

The animals which seem to approach no other kind, either in nature or in form, but to make each a distinct species in itself, are the following: the Elephant, the Rhinoceros, the Hippopotamus, the Camelopard, the Camel, the Bear, the Badger, the Tapir, the Cabiai, the Coati, the Ant-bear, the Tatau, and

trary, and that nature makes no exact distinction between her productions. It is hard, for instance, to tell whether we ought to refer the civet to the dog or the cat kind; but, if we know the exact history of the civet, it is no great matter to which kind we shall judge it to bear the greatest resemblance. It is enough that a distribution of this kind excites in us some rude outlines of the make, or some marked similitudes in the nature of these animals; but to know them with any precision, no system, or even description will serve, since the animal itself, or a good print of it, must be seen, and its history be read at length, before it can be said to be known. To pretend to say that we have an idea of a quadruped, because we can tell the number, or the make of its teeth, or its paps, is as absurd as if we should pretend to distinguish men by the buttons on their clothes. Indeed it often happens that the quadruped itself can be but seldom seen; that many of the more rare kinds do not come into Europe above once in an age, and some of them have never been able to bear the removal: in such a case, therefore, there is no other substitute but a good print of the animal to give an idea of its figure; for no description whatsoever can answer this purpose so well. Mr. Locke, with his usual good sense, has observed, that a drawing of the animal, taken from the life, is one of the best methods of advancing natural history; and yet, most of our modern systematic writers are content rather with describing. Descriptions, no doubt, will go some way towards giving an idea of the figure of an animal; but they are certainly much the longest way about, and, as they are usually managed, much the most obscure. In a drawing we can, at a single glance, gather more instruction than by a day's painful investigation of methodical systems, where we are told the proportions with great exactness, and yet

remain ignorant of the totality. In fact, this method of describing all things is a fault that has infected many of our books that treat on the meaner arts, for this last age. They attempt to teach by words what is only to be learnt by practice and inspection. Most of our dictionaries, and bodies of arts and sciences, are guilty of this error. Suppose, for instance, it be requisite to mention the manner of making shoes, it is plain that all the verbal instructions in the world will never give an adequate idea of this humble art, or teach a man to become a shoemaker. A day or two in a shoemaker's shop will answer the end better than a whole folio of instruction, which only serves to oppress the learner with the weight of its pretended importance. We have lately seen a laborious work carried on at Paris, with this only intent of teaching all the trades by description: however, the design at first blush seems to be ill considered; and it is probable that very few advantages will be derived from so laborious an undertaking. With regard to the descriptions in natural history, these, without all question, under the direction of good sense, are necessary; but still they should be kept within proper bounds; and where a thing may be much more easily shown than described, the exhibition should ever precede the account.

CHAPTER V.

OF QUADRUPEDS IN GENERAL, COMPARED TO MAN.

Upon comparing the various animals of the globe with each other, we shall find that Quadrupeds demand the rank immediately next ourselves; and, consequently, come first in consideration. The si-

militude between the structure of their bodies and ours, those instincts which they enjoy, in a superior degree to the rest, their constant services, or their unceasing hostilities, all render them the foremost objects of our curiosity, and the most interesting parts of animated nature. These, however, although now so completely subdued, very probably, in the beginning were nearer upon an equality with us, and disputed the possession of the earth. Man, while yet savage himself, was but ill qualified to civilize the forest. While yet naked, unarmed, and without shelter, every wild beast was a formidable rival; and the destruction of such was the first employment of heroes. But, when he began to multiply, and arts to accumulate, he soon cleared the plains of the most noxious of these his rivals; a part was taken under his protection and care, while the rest found a precarious refuge in the burning desert, or the howling wilderness.

From being rivals, quadrupeds have now become the assistants of man; upon them he devolves the most laborious employments, and finds in them patient and humble coadjutors, ready to obey, and content with the smallest retribution. It was not, however, without long and repeated efforts that the independent spirit of these animals was broken; for the savage freedom, in wild animals, is generally found to pass down through several generations before it is totally subdued. Those cats and dogs that are taken from a state of natural wildness in the forest, transmit their fierceness to their young; and, however concealed in general, it breaks out upon several occasions. Thus the assiduity and application of man in bringing them up, not only alters their disposition, but their very forms; and the difference between animals in a state of nature and domestic tameness is so considerable, that M. Buffon has taken this as a principal distinction in classing them.

In taking a cursory view of the form of quadrupeds, we may easily perceive that, of all the ranks of animated nature, they bear the nearest resemblance to man. This similitude will be found more striking, when, erecting themselves on their hinder feet, they are taught to walk forward in an upright posture. We then see that all their extremities in a manner correspond with ours, and present us with a rude imitation of our own. In some of the ape kind the resemblance is so striking, that anatomists are puzzled to find in what part of the human body man's superiority consists; and scarcely any but the metaphysician can draw the line that ultimately divides them.

But if we compare their internal structure with our own, the likeness will be found still to increase, and we shall perceive many advantages they enjoy in common with us, above the lower tribes of nature. Like us, they are placed above the class of birds, by bringing forth their young alive; like us, they are placed above the class of fishes, by breathing through the lungs; like us, they are placed above the class of insects, by having red blood circulating through their veins; and lastly, like us, they are different from almost all the other classes of animated nature, being either wholly or partly covered with hair. Thus nearly are we represented in point of conformation to the class of animals immediately below us; and this shows what little reason we have to be proud of our persons alone, to the perfection of which quadrupeds make such very near approaches.

The similitude of quadrupeds to man obtains also in the fixedness of their nature, and their being less apt to be changed by the influence of climate or food than the lower ranks of nature.* Birds are found very apt to alter both in colour and size; fishes, like-

* Buffon, vol. xviii, p. 179.

wise, still more; insects may be quickly brought to change and adapt themselves to the climate: and if we descend to plants, which may be allowed to have a kind of living existence, their kinds may be surprisingly and readily altered, and taught to assume new forms. The figure of every animal may be considered as a kind of drapery, which it may be made to put on or off by human assiduity: in man the drapery is almost invariable; in quadrupeds it admits of some variation: and the variety may be made greater still as we descend to the inferior classes of animal existence.

Quadrupeds, although they are thus strongly marked, and in general divided from the various kinds around them, yet some of them are often of so equivocal a nature, that it is hard to tell whether they ought to be ranked in the quadruped class, or degraded to those below them. If, for instance, we were to marshal the whole group of animals round man, placing the most perfect next him, and those most equivocal near the classes they most approach, we should find it difficult, after the principal had taken their stations near him, where to place many that lie at the outskirts of this phalanx. The bat makes a near approach to the aerial tribe, and might by some be reckoned among the birds. The porcupine has not less pretensions to that class, being covered with quills, and showing that birds are not the only part of nature that are furnished with such a defence. The armadillo might be referred to the tribe of insects, or snails, being, like them, covered with a shell; the seal and the morse might be ranked among the fishes, like them being furnished with fins, and almost constantly residing in the same element. All these, the farther they recede from the human figure, become less perfect, and may be considered as the lowest kinds of that class to which we have referred them.

But although the variety in quadrupeds is thus great, they all seem well adapted to the stations in which they are placed. There is scarcely one of them, how rudely shaped soever, that is not formed to enjoy a state of happiness fitted to its nature. All its deformities are only relative to us, but all its enjoyments are peculiarly its own. We may superficially suppose the sloth, that takes up months in climbing a single tree, or the mole, whose eyes are too small for distinct vision, are wretched and helpless creatures; but it is probable that their life, with respect to themselves, is a life of luxury; the most pleasing food is easily obtained, and, as they are abridged in one pleasure, it may be doubled in those which remain. Quadrupeds, and all the lower kinds of animals, have, at worst, but the torments of immediate evil to encounter, and this is but transient and accidental; man has two sources of calamity,—that which he foresees, as well as that which he feels; so that if his rewards were to be in this life alone, then, indeed, would he be of all beings the most wretched.

The heads of quadrupeds, though differing from each other, are in general adapted to their way of living. In some it is sharp, the better to fit the animal for turning up the earth in which its food lies. In some it is long, in order to give a greater room

The teeth of all animals are entirely fitted to the nature of their food. Those of such as live upon flesh differ in every respect from such as live upon vegetables. In the latter, they seem entirely made for gathering and bruising their simple food, being edged before, and fitted for cutting; but broad towards the back of the jaw, and fitted for pounding. In the carnivorous kinds they are sharp before, and fitted rather for holding than dividing. In the one the teeth serve as grindstones, in the other as weapons of defence; in both, however, the surface of those teeth which serve for grinding are unequal, the cavities and risings fitting those of the opposite, so as to tally exactly when the jaws are brought together. These inequalities better serve for comminuting the food; but they become smooth with age; and for this reason old animals take a longer time to chew their food than such as are in the vigour of life.

Their legs are not better fitted than their teeth to their respective wants or enjoyments. In some they are made for strength only, and to support a vast unwieldy frame, without much flexibility or beautiful proportion. Thus the legs of the elephant, the rhinoceros, and the sea-horse, resemble pillars: were they made smaller, they would be unfit to support the body; were they endowed with greater flexibility or swiftness, it would be useless, as they do not pursue other animals for food, and, conscious of their own superior strength, there are none that they deign to avoid. Deers, hares, and other creatures, that are to find safety only in flight, have their legs made entirely for speed; they are slender and nervous. Were it not for this advantage, every carnivorous animal would soon make them a prey, and their races would be entirely extinguished. But in the present state of nature, the means of safety are ra-

ther superior to those of offence; and the pursuing animal must owe success only to patience, perseverance, and industry. The feet of some, that live upon fish alone, are made for swimming. The toes of those animals are joined together with membranes, being web-footed, like a goose or a duck, by which they swim with great rapidity. Those animals that lead a life of hostility, and live upon others, have their feet armed with sharp claws, which some can sheath and unsheath at will. Those, on the contrary, who lead peaceful lives, have generally hoofs, which serve some as weapons of defence, and which in all are better fitted for traversing extensive tracts of rugged country, than the claw foot of their pursuers.

The stomach is generally proportioned to the quality of the animal's food, or the ease with which it is obtained. In those that live upon flesh and such nourishing substances, it is small and glandular, affording such juices as are best adapted to digest its contents; their intestines also are short, and without fatness. On the contrary, such animals as feed entirely upon vegetables, have the stomach very large; and those who chew the cud have no less than four stomachs, all which serve as so many laboratories to prepare and turn their coarse food into proper nourishment. In Africa, where the plants afford

In this manner, all animals are fitted by nature to fill up some peculiar station. The greatest animals are made for an inoffensive life, to range the plains and the forest without injuring others; to live upon the productions of the earth, the grass of the fields, or the tender branches of trees. These, secure in their own strength, neither fly from any other quadrupeds, nor yet attack them; nature, to the greatest strength, has added the most gentle and harmless dispositions: without this, those enormous creatures would be more than a match for all the rest of the creation; for what devastation might not ensue, were the elephant, or the rhinoceros, or the buffalo, as fierce and as mischievous as the tiger or the rat? In order to oppose these large animals, and in some measure to prevent their exuberance, there is a species of the carnivorous kind, of inferior strength indeed, but of greater activity and cunning. The lion and the tiger generally watch for the larger kinds of prey, attack them at some disadvantage, and commonly jump upon them by surprise. None of the carnivorous kinds, except the dog alone, will make a voluntary attack but with the odds on their side. They are all cowards by nature, and usually catch their prey by a bound from some lurking place, seldom attempting to invade them openly; for the larger beasts are too powerful for them, and the smaller too swift.

A lion does not willingly attack a horse, and then only when compelled by the keenest hunger. The combats between a lion and a horse are frequent enough in Italy, where they are both enclosed in a kind of ampitheatre fitted for that purpose. The lion always approaches wheeling about, while the horse presents his hinder parts to the enemy. The lion in this manner goes round and round, still narrowing his circle, till he comes to the proper dis-

tance to make his spring: just at the time the lion springs the horse lashes with both legs from behind, and in general the odds are in his favour; it more often happening that the lion is stunned and struck motionless by the blow, than that he effects his jump between the horse's shoulders. If the lion is stunned, and left sprawling, the horse escapes without attempting to improve his victory; but if the lion succeeds, he sticks to his prey, and tears the horse in pieces in a very short time.

But it is not among the larger animals of the forest alone that these hostilities are carried on; there is a minuter and a still more treacherous contest between the lower ranks of quadrupeds. The panther hunts for the sheep and the goat; the catamountain for the hare or the rabbit; and the wild cat for the squirrel or the mouse. In proportion as each carnivorous animal wants strength, it uses all the assistance of patience, assiduity, and cunning. However, the arts of these to pursue, are not so great as the tricks of their prey to escape; so that the power of destruction in one class, is inferior to the power of safety in the other. Were this otherwise, the forest would soon be dispeopled of the feebler races of animals, and beasts of prey themselves would want at one time that subsistence which they lavishly destroyed at another.

Few wild animals seek their prey in the day-time; they are then generally deterred by their fears of man in the inhabited countries, and by the excessive heat of the sun in those extensive forests that lie towards the south, and in which they reign the undisputed tyrants. As soon as the morning, therefore, appears, the carnivorous animals retire to their dens; and the elephant, the horse, the deer, and all the hare kinds, those inoffensive tenants of the plain, make their appearance. But again, at night fall,

the state of hostility begins; the whole forest then echoes to a variety of different howlings. Nothing can be more terrible than an African landscape at the close of evening: the deep-toned roarings of the lion; the shriller yellings of the tiger; the jackall, pursuing by the scent, and barking like a dog; the hyæna, with a note peculiarly solitary and dreadful; but above all, the hissing of the various kinds of serpents, that then begin their call, and, as I am assured, make a much louder symphony than the birds in our groves in a morning.

Beasts of prey seldom devour each other; nor can any thing but the greatest degree of hunger induce them to it. What they chiefly seek after is the deer or the goat, those harmless creatures that seem made to embellish nature. These are either pursued or surprised, and afford the most agreeable repast to their destroyers. The most usual method, with even the fiercest animals, is to hide and crouch near some path frequented by their prey, or some water where cattle come to drink, and seize them at once with a bound. The lion and the tiger leap twenty feet at a spring; and this, rather than their swiftness or strength, is what they have most to depend upon for a supply. There is scarcely one of the deer or hare kind, that is not very easily capable of escaping them by its swiftness; so that whenever any of these fall a prey, it must be owing to their own inattention.

But there is another class of the carnivorous kind that hunt by the scent, and which it is much more difficult to escape. It is remarkable, that all animals of this kind pursue in a pack, and encourage each other by their mutual cries. The jackall, the syagush, the wolf, and the dog, are of this kind; they pursue with patience rather than swiftness; their prey flies at first, and leaves them for miles behind; but they keep on with a constant steady pace, and

excite each other by a general spirit of industry and emulation, till at last they share the common plunder. But it too often happens, that the larger beasts of prey, when they hear a cry of this kind begun, pursue the pack, and when they have hunted down the animal, come in and monopolize the spoil. This has given rise to the report of the jackall's being the lion's provider; when the reality is, that the jackall hunts for itself, and the lion is an unwelcome intruder upon the fruit of his toil.

Nevertheless, with all the powers which carnivorous animals are possessed of, they generally lead a life of famine and fatigue. Their prey has such a variety of methods for escaping, that they sometimes continue without food for a fortnight together; but nature has endowed them with a degree of patience equal to the severity of their state; so that, as their subsistence is precarious, their appetites are complying. They usually seize their prey with a roar, either of seeming delight, or perhaps to terrify it from resistance. They frequently devour it, bones and all, in the most ravenous manner; and then retire to their dens, continuing inactive till the calls of hunger again excite their courage and industry. But, as all their methods of pursuit are counteracted by the arts of evasion, they often continue to range without success, supporting a state of famine for several days, nay, sometimes, for weeks together. Of their prey, some find protection in holes, in which nature has directed them to bury themselves; some find safety by swiftness; and such as are possessed of neither of these advantages, generally herd together, and endeavour to repel invasion by united force. The very sheep, which to us seem so defenceless, are by no means so in a state of nature; they are furnished with arms of defence, and a very great degree of swiftness. But they are still further

assisted by their spirit of mutual defence: the females fall into the centre, and the males, forming a ring round them, oppose their horns to the assailants. Some animals, that feed upon fruits which are to be found only at one time of the year, fill their holes with several sorts of plants, which enable them to lie concealed during the hard frosts of the winter, contented with their prison, since it affords them plenty and protection. These holes are dug with so much art, that there seems the design of an architect in the formation. There are usually two apertures, by one of which the little inhabitant can always escape when the enemy is in possession of the other. Many creatures are equally careful of avoiding their enemies, by placing a sentinel to warn them of the approach of danger. These generally perform this duty by turns; and they know how to punish such as have neglected their post, or have been unmindful of the common safety. Such are a part of the efforts that the weaker races of quadrupeds exert to avoid their invaders; and, in general, they are attended with success. The arts of instinct are most commonly found an overmatch for the invasions of instinct. Man is the only creature against whom all their little tricks cannot prevail. Wherever he has spread his dominion, scarcely any flight can save, or any retreat harbour; wherever he comes, terror seems to follow, and all society ceases among the inferior tenants of the plain; their union against him can yield them no protection, and their cunning is but weakness. In their fellow-brutes, they have an enemy whom they can oppose with an equality of advantage; they can oppose fraud or swiftness to force, or numbers to invasion: but what can be done against such an enemy as man, who finds them out though unseen, and though remote, destroys them? Wherever he comes, all the contest among the meaner

ranks seems to be at an end, or is carried on only by surprise. Such as he has thought proper to protect, have calmly submitted to his protection; such as he has found convenient to destroy, carry on an unequal war, and their numbers are every day decreasing.

The wild animal is subject to few alterations; and in a state of savage nature, continues for ages the same, in size, shape, and colour. But it is otherwise when subdued, and taken under the protection of man: its external form, and even its internal structure, are altered by human assiduity; and this is one of the first and greatest causes of the variety that we see among the several quadrupeds of the same species. Man appears to have changed the very nature of domestic animals, by cultivation and care. A domestic animal is a slave that seems to have few other desires but such as man is willing to allow it: Humble, patient, resigned, and attentive, it fills up the duties of its station; ready for labour, and content with subsistence.

Almost all domestic animals seem to bear the marks of servitude strong upon them. All the varieties in their colour, all the fineness and length of their hair, together with the depending length of their ears, seem to have arisen from a long continuance of domestic slavery. What an immense variety is there to be found in the ordinary race of dogs and horses! the principal differences of which have been effected by the industry of man, so adapting the food, the treatment, the labour, and the climate, that nature seems almost to have forgotten her original design, and the tame animal no longer bears any resemblance to its ancestors in the woods around him.

In this manner, nature is under a kind of constraint, in those animals we have taught to live in a

state of servitude near us. The savage animals preserve the marks of their first formation; their colours are generally the same; a rough dusky brown, or a tawny, seem almost their only varieties. But it is otherwise in the tame; their colours are various, and their forms different from each other. The nature of the climate, indeed, operates upon all, but more particularly on these. That nourishment which is prepared by the hand of man, not adapted to their appetites, but to suit his own convenience, that climate the rigours of which he can soften, and that employment to which they are sometimes assigned, produce a number of distinctions that are not to be found among the savage animals. These at first were accidental, but in time became hereditary; and a new race of artificial monsters are propagated, rather to answer the purposes of human pleasure, than their own convenience. In short, their very appetites may be changed; and those that feed only upon grass, may be rendered carnivorous. I have seen a sheep that would eat flesh, and a horse that was fond of oysters.

But not their appetites, or their figure alone, but their very dispositions, and their natural sagacity, are altered by the vicinity of man. In those countries where men have seldom intruded, some animals have been found established in a kind of civil state of society. Remote from the tyranny of man, they seem to have a spirit of mutual benevolence and mutual friendship. The beavers, in these distant solitudes, are known to build like architects, and rule like citizens. The habitations that these have been seen to erect, exceed the houses of the human inhabitants of the same country, both in neatness and convenience. But as soon as man intrudes upon their society, they seem impressed with the terrors of their inferior situation, their spirit of society

ceases, the bond is dissolved, and every animal looks for safety in solitude, and there tries all its little industry to shift only for itself.

Next to human influence, the climate seems to have the strongest effects both upon the nature and form of quadrupeds. As in man we have seen some alterations produced by the variety of his situation, so in the lower ranks, that are more subject to variation, the influence of climate is more readily perceived. As these are more nearly attached to the earth, and in a manner connected to the soil; as they have none of the arts of shielding off the inclemency of the weather, or softening the rigours of the sun, they are consequently more changed by its variations. In general it may be remarked, that the colder the country, the larger and the warmer is the fur of each animal; it being wisely provided by nature, that the inhabitant should be adapted to the rigours of its situation. Thus the fox and wolf, which in temperate climates have but short hair, have a fine long fur in the frozen regions near the pole. On the contrary, those dogs which with us have long hair, when carried to Guinea, or Angola, in a short time cast their thick covering, and assume a lighter dress, and one more adapted to the warmth of the country. The beaver and the ermine, which are found in the greatest plenty in the cold regions, are remarkable for the warmth and delicacy of their furs; while the elephant and the rhinoceros, that are natives of the Line, have scarcely any hair. Not but that human industry can, in some measure, co-operate with, or repress the effects of climate in this particular. It is well known what alterations are produced by proper care, in the sheep's fleece, in different parts of our own country; and the same industry is pursued with a like success in Syria, where many of their animals are clothed with a long and beautiful hair,

which they take care to improve, as they work it into that stuff called camblet, so well known in different parts of Europe.

The disposition of the animal seems also not less marked by the climate than the figure. The same causes that seem to have rendered the human inhabitants of the rigorous climates savage and ignorant, have also operated upon their animals. Both at the Line and the Pole the wild quadrupeds are fierce and untameable. In these latitudes, their savage dispositions having not been quelled by any efforts from man, and being still farther stimulated by the severity of the weather, they continue fierce and untractable. Most of the attempts which have hitherto been made to tame the wild beasts brought home from the Pole or the Equator, have proved ineffectual. They are gentle and harmless enough while young; but as they grow up, they acquire their natural ferocity, and snap at the hand that feeds them. It may indeed in general be asserted, that in all countries where the men are most barbarous, the beasts are most fierce and cruel: and this is but a natural consequence of the struggle between man and the more savage animals of the forest: for in proportion as he is weak and timid, they must be bold and intrusive, in proportion as his dominion is but feebly supported, their rapacity must be more obnoxious. In the extensive countries, therefore, lying round the Pole, or beneath the Line, the quadrupeds are fierce and formidable. Africa has ever been remarked for the brutality of its men, and the fierceness of its animals: its lions and its leopards are not less terrible than its crocodiles and its serpents; their dispositions seem entirely marked with the rigours of the climate; and being bred in an extreme of heat, they show a peculiar ferocity, that neither the force of man can conquer, nor his arts allay. However, it

is happy for the wretched inhabitants of those climates, that its most formidable animals are all solitary ones; that they have not learnt the art of uniting to oppress mankind, but each, depending on its own strength, invades without any assistant.

The food is also another cause in the variety which we find among quadrupeds of the same kind. Thus the beasts which feed in the valley are generally larger than those which glean a scanty subsistence on the mountain. Such as live in the warm climates, where the plants are much larger and more succulent than with us, are equally remarkable for their bulk. The ox fed in the plains of Indostan is much larger than that which is more hardily maintained on the side of the Alps. The deserts of Africa, where the plants are extremely nourishing, produce the largest and fiercest animals; and perhaps, for a contrary reason, America is found not to produce such large animals as are seen in the ancient continent. But whatever be the reason, the fact is certain, that while America exceeds us in the size of its reptiles of all kinds, it is far inferior in its quadruped productions. Thus, for instance, the largest animal of that country is the tapir, which can by no means be compared to the elephant of Africa. Its beasts of prey also are devested of that strength and courage which is so dangerous in this part of the world. The American lion, tiger, and leopard, if such diminutive creatures deserve these names, are neither so fierce nor so valiant as those of Africa, and Asia. The tiger of Bengal has been seen to measure twelve feet in length, without including the tail, whereas the American tiger seldom exceeds three. This difference obtains still more in the other animals of that country, so that some have been of opinion,* that all quadrupeds in Southern America

* Buffon.

are of a different species from those most resembling them in the old world, and that there are none which are common to both but such as have entered America by the north; and which, being able to bear the rigours of the frozen pole, have travelled from the ancient continent by that passage into the new. Thus the bear, the wolf, the elk, the stag, the fox, and the beaver, are known to the inhabitant, as well of North America as of Russia; while most of the various kinds to the southward, in both continents, bear no resemblance to each other. Upon the whole, such as peculiarly belong to the new continent are without any marks of the quadruped perfection. They are almost wholly destitute of the power of defence; they have neither formidable teeth, horns, or tail; their figure is awkward, and their limbs ill proportioned. Some among them, such as the ant-bear and the sloth, appear so miserably formed as scarcely to have the power of moving and eating. They, seemingly, drag out a miserable and languid existence in the most desert solitude; and would quickly have been destroyed in a country where there were inhabitants or powerful beasts to oppose them.

But if the quadrupeds of the new continent be less, they are found in much greater abundance; for it is a rule that obtains through nature, that the smallest animals multiply the fastest. The goat, imported from Europe to South America, soon begins to degenerate; but as it grows less it becomes more prolific, and instead of one kid at a time, or two at the most, it generally produces five, and sometimes more. What there is in the food, or the climate, that produces this change, we have not been able to learn; we might be apt to ascribe it to the heat, but that on the African coast, where it is still hotter, this rule does not obtain; for the goat, instead of degenerating there, seems rather to improve.

However, the rule is general among all quadrupeds, that those which are large and formidable produce but few at a time; while such as are mean and contemptible are extremely prolific. The lion or tiger have seldom above two cubs at a litter; while the cat, that is of a similar nature, is usually seen to have five or six. In this manner, the lower tribes become extremely numerous; and but, for this surprising fecundity, from their natural weakness, they would quickly be extirpated. The breed of mice, for instance, would have long since been blotted from the earth, were the mouse as slow in production as the elephant. But it has been wisely provided, that such animals as can make but little resistance, should at least have a means of repairing the destruction which they must often suffer, by their quick reproduction; that they should increase even among enemies, and multiply under the hand of the destroyer. On the other hand, it has as wisely been ordered by Providence, that the larger kinds should produce but slowly; otherwise, as they require proportional supplies from nature, they would quickly consume their own store, and, of consequence, many of them would soon perish through want; so that life would thus be given without the necessary means of subsistence. In a word, Providence has most wisely balanced the strength of the great against the weakness of the little. Since it was necessary that some should be great and others mean, since it was expedient that some should live upon others, it has assisted the weakness of one by granting it fruitfulness, and diminished the number of the other by infecundity.

In consequence of this provision, the larger creatures, which bring forth few at a time, seldom begin to generate till they have nearly acquired their full growth. On the contrary, those which bring many,

reproduce before they have arrived at half their natural size. Thus the horse and the bull are nearly at their best before they begin to breed; the hog and the rabbit scarce leave the teat before they become parents in turn. Almost all animals likewise continue the time of their pregnancy in proportion to their size. The mare continues eleven months with foal, the cow nine, the wolf five, and the bitch nine weeks. In all, the intermediate litters are the most fruitful; the first and the last generally producing the fewest in number, and the worst of the kind.

Whatever be the natural disposition of animals at other times, they all acquire new courage when they consider themselves as defending their young. No terrors can then drive them from the post of duty; the mildest begin to exert their little force, and resist the most formidable enemy. Where resistance is hopeless, they then incur every danger in order to rescue their young by flight, and retard their own expedition by providing for their little ones. When the female opossum, an animal of America, is pursued, she instantly takes her young into a false belly, with which nature has supplied her, and carries them off, or dies in the endeavour. I have been lately assured of a she-fox, which, when hunted, took her cub in her mouth, and ran for several miles without quitting it, until at last she was forced to leave it behind, upon the approach of a mastiff, as she ran through a farmer's yard. But if at this period the mildest animals acquire new fierceness, how formidable must those be that subsist by rapine? At such times no obstacles can stop their ravage, nor no threats can terrify; the lioness then seems more hardy than even the lion himself. She attacks men and beasts indiscriminately, and carries all she can overcome reeking to her cubs, whom she thus early accustoms to slaughter. Milk in the carnivorous ani-

mals is much more sparing than in others; and it may be for this reason that all such carry home their prey alive, that in feeding their young its blood may supply the deficiences of nature, and serve instead of that milk with which they are so sparingly supplied.

Nature, that has thus given them courage to defend their young, has given them instinct to choose the proper times of copulation, so as to bring forth when the provision suited to each kind is to be found in the greatest plenty. The wolf, for instance, couples in December, so that the time of pregnancy continuing five months, it may have its young in April. The mare, who goes eleven months, admits the horse in summer, in order to foal about the beginning of May. On the contrary, those animals which lay up provisions for the winter, such as the beaver and the marmot, couple in the latter end of autumn, so as to have their young about January, against which season they have provided a very comfortable store. These seasons for coupling, however, among some of the domestic kinds, are generally in consequence of the quantity of provisions with which they are at any time supplied. Thus we may, by feeding any of these animals, and keeping off the rigour of the climate, make them breed whenever we please. In this manner those contrive who produce lambs all the year round.

The choice of situation in bringing forth is also very remarkable. In most of the rapacious kinds, the female takes the utmost precautions to hide the place of her retreat from the male; who otherwise, when pressed by hunger, would be apt to devour her cubs. She seldom, therefore, strays far from the den, and never approaches it while he is in view, nor visits him again till her young are capable of providing for themselves. Such animals as are

of tender constitutions take the utmost care to provide a place of warmth as well as safety for their young; the rapacious kinds bring forth in the thickest woods; those that chew the cud, with the various tribes of the vermin kind, choose some hiding place in the neighbourhood of man. Some dig holes in the ground; some choose the hollow of a tree; and all the amphibious kinds bring up their young near the water, and accustom them betimes to their proper element.

Thus nature seems kindly careful for the protection of the meanest of her creatures: but there is one class of quadrupeds that seems entirely left to chance, that no parent stands forth to protect, nor no instructor leads, to teach the arts of subsistence. These are the quadrupeds that are brought forth from the egg, such as the lizard, the tortoise, and the crocodile. The fecundity of all other animals compared with these is sterility itself. These bring forth above two hundred at a time; but as the offspring is more numerous, the parental care is less exerted. Thus the numerous brood of eggs are, without farther solicitude, buried in the warm sands of the shore, and the heat of the sun alone is left to bring them to perfection. To this perfection they arrive almost as soon as disengaged from the shell. Most of them, without any other guide than instinct, immediately make to the water. In their passage thither, they have numberless enemies to fear. The birds of prey that haunt the shore, the beasts that accidentally come that way, and even the animals that give them birth, are known, with a strange rapacity, to thin their numbers as well as the rest.

But it is kindly ordered by Providence that these animals, which are mostly noxious, should thus have many destroyers: were it not for this, by their extreme fecundity they would soon overrun the earth, and cumber all our plains with deformity.

CHAPTER VI.

ANIMALS OF THE HORSE KIND.*

ANIMALS of the horse kind deserve a place next to man, in a history of nature. Their activity, their strength, their usefulness, and their beauty, all contribute to render them the principal objects of our curiosity and care, a race of creatures in whose welfare we are interested next to our own.

Of all the quadruped animals, the horse seems the most beautiful: the noble largeness of his form, the glossy smoothness of his skin, the graceful ease of his motions, and the exact symmetry of his shape, have taught us to regard him as the first, and as the most perfectly formed; and yet, what is extraordinary enough, if we examine him internally, his structure will be found the most different from that

* As it may happen, that, in a description where it is the aim rather to insert what is not usually known, than all that is known, some of the more obvious particulars may be omitted; I will take leave to subjoin in the notes the characteristic marks of each animal,† as given us by Linnæus. "The horse, with six cutting teeth before, and single-hoofed, a native of Europe and the East, (but I rather believe of Africa,) a generous, proud, and strong animal, fit either for the draught, the course, or the road: he is delighted with woods, he takes care of his hinder parts, defends himself from the flies with his tail, scratches his fellow, defends its young, calls by neighing, sleeps after night-fall, fights by kicking, and by biting also, rolls on the ground when he sweats, eats the grass closer than the ox, distributes the seed by dunging, wants a gall-bladder, never vomits; the foal is produced with the feet stretched out; he is injured by being struck on the ear, upon the stiffle, by being caught by the nose in barnacles, by having his teeth rubbed with tallow, by the herb padus, by the herb phalandria, by the cruculio, by the conops. His diseases are different in different countries: a consumption of the ethmoid bones of the nose, called the *glanders*, is with us the most infectious and fatal. He eats hemlock without injury. The mare goes with foal two hundred and ninety days. The placenta is not fixed. He acquires not the canine teeth till the age of five years."

† [Instead, however, of giving these characteristic marks in the notes, the Author has in general incorporated them with the text. Where any part of them appears to have been omitted, the deficiency has been supplied from the best authorities.]

J. Boyd &c.

1. Arabian Horse. 2. English Hunter. 3. English Race Horse.

of man of all other quadrupeds whatsoever. As the ape approaches us the nearest in internal conformation, so the horse is the most remote;*—a striking proof that there may be oppositions of beauty, and that all grace is not to be referred to one standard.

To have an idea of this noble animal in his native simplicity, we are not to look for him in the pastures, or the stables, to which he has been consigned by man; but in those wild and extensive plains where he has been originally produced, where he ranges without control, and riots in all the variety of luxurious nature. In this state of happy independence, he disdains the assistance of man, which only tends to servitude. In those boundless tracts, whether of Africa or New Spain, where he runs at liberty, he seems no way incommoded with the inconveniences to which he is subject in Europe. The continual verdure of the fields supplies his wants; and the climate that never knows a winter, suits his constitution, which naturally seems adapted to heat. His enemies of the forest are but few, for none but the greater kinds will venture to attack him; any one of these he is singly able to overcome, while at the same time he is content to find safety in society; for the wild horses of those countries always herd together.

In these countries, therefore, the horses are often seen feeding in droves of five or six hundred. As they do not carry on war against any other race of animals, they are satisfied to remain entirely upon the defensive. The pastures on which they live satisfy all their appetites, and all other precautions are purely for their security in case of a surprise. As they are never attacked but at a disadvantage, whenever they sleep in the forest, they have always one among their number that stands as sentinel, to give notice of

* Histoire Naturelle, Daubenton, vol. vii, p. 374.

any approaching danger; and this office they take by turns.* If a man approaches them while they are feeding by day, their sentinel walks up boldly near him as if to examine his strength, or to intimidate him from proceeding; but if the man approaches within pistol-shot, the sentinel then thinks it high time to alarm his fellows: this he does by a loud kind of snorting, upon which they all take the signal, and fly off with the speed of the wind; their faithful sentinel bringing up the rear.†

It is not easy to say from what country the horse came originally. It should seem that the colder climates do not agree with his constitution; for although he is found almost in them all, yet his form is altered there, and he is found at once diminutive and ill-shaped. We have the testimony of the ancients that there were wild horses once in Europe; at present, however, they are totally brought under subjection and even those which are found in America are of a Spanish breed, which being sent thither upon its first discovery, have since become wild, and have spread over all the South of that vast continent almost to the Straits of Magellan. These, in general, are a small breed, of about fourteen hands high. They have thick jaws and clumsy joints; their ears and neck also are long; they are easily tamed; for the horse, by nature, is a gentle complying creature, and resists rather from fear than obstinacy. They are caught by a kind of noose, and then held fast by the legs, and tied to a tree, where they are left for two days, without food or drink. By that time they begin to grow manageable; and in some weeks they become as tame as if they had never been in a state of wildness. If by any accident they are once more set at liberty, they never become wild again, but know their masters, and come to their call. Some of the

* Dictionnaire Universel des Animaux, p. 19. † Labat, tome vii.

buccaneers have often been agreeably surprised, after a long absence, to see their faithful horses once more present themselves with their usual assiduity, and come up, with a fond submission, to receive the rein.

These American horses, however, cannot properly be ranked among the wild races, since they were originally bred from such as were tame. It is not in the new, but the old world, that we are to look for this animal in a true state of nature; in the extensive deserts of Africa, in Arabia, and those wide-spread countries that separate Tartary from the more southern nations. Vast droves of these animals are seen wild among the Tartars: they are of a small breed, extremely swift, and very readily evade their pursuers. As they go together, they will not admit of any strange animals among them, though even of their own kind. Whenever they find a tame horse attempting to associate with them, they instantly gather round him, and soon oblige him to seek safety by flight. There are vast numbers also of wild horses to the north of China, but they are of a weak timid breed, small of stature, and useless in war.

At the Cape of Good Hope there are numbers of horses in a state of nature, but small, vicious, and untameable. They are found wild also in several other parts of Africa; but the wretched inhabitants of that country either want the art to tame them, or seem ignorant of their uses. It is common with the negroes, who are carried over from thence to America, when they first see a horse to testify both terror and surprise. These poor men seem not to have any knowledge of such a creature; and though the horse is probably a native of their own country, they have let all the rest of mankind enjoy the benefit of his services, without turning them to any advantage at home. In some parts of Africa, there-

fore, where the horse runs wild, the natives seem to consider him rather in the light of a dainty for food, than a useful creature, capable of assisting them either in war or labour: riding seems a refinement that the natives of Angola or Caffraria have not as yet been able to attain to; and whenever they catch a horse, it is only with an intent to eat him.

But of all countries in the world where the horse runs wild, Arabia produces the most beautiful breed, the most generous, swift, and persevering. They are found, though not in great numbers, in the deserts of that country; and the natives use every stratagem to take them. Although they are active and beautiful, yet they are not so large as those that are bred up tame; they are of a brown colour, their mane and tail very short, and the hair black and tufted.* Their swiftness is incredible; the attempt to pursue them in the usual manner of the chase with dogs, would be entirely fruitless. Such is the rapidity of their flight, that they are instantly out of view, and the dogs themselves give up the vain pursuit. The only method, therefore, of taking them is by traps hidden in the sand, which entangling their feet, the hunter at length comes up, and either kills them or carries them home alive. If the horse be young, he is considered among the Arabians as a very great delicacy, and they feast upon him while any part is found remaining; but if, from his shape or vigour, he promises to be serviceable in his more noble capacity, they take the usual methods of taming him by fatigue and hunger, and he soon becomes an useful domestic animal.

The usual manner of trying their swiftness is by hunting the ostrich: the horse is the only animal whose speed is comparable to that of this creature, which is found in the sandy plains with which those

* Marm. Descript. de l'Afrique, lib. i, p. 51.

countries abound. The instant the ostrich perceives itself aimed at, it makes to the mountains, while the horseman pursues with all the swiftness possible, and endeavours to cut off its retreat. The chase then continues along the plain, while the ostrich makes use of both legs and wings to assist its motion. However, a horse of the first speed is able to outrun it; so that the poor animal is then obliged to have recourse to art to elude the hunter, by frequently turning: at length, finding all escape hopeless, it hides its head wherever it can, and suffers itself tamely to be taken. If the horse, in a trial of this kind, shows great speed, and is not readily tired, his price becomes proportionably great, and there are some horses valued at a thousand ducats.

But the horses thus caught, or trained in this manner, are at present but very few; the value of Arabian horses over all the world has in a great measure thinned the deserts of the wild breed, and there are very few to be found in those countries except such as are tame. The Arabians, as we are told by historians, first began the management of horses in the time of Sheque Ismael. Before that, they wandered wild along the face of the country, neglected and useless; but the natives then first began to tame their fierceness, and to improve their beauty; so that at present they possess a race of the most beautiful horses in the world, with which they drive a trade, and furnish the stables of princes at immense prices.

There is scarcely an Arabian, how poor soever, but is provided with his horse.* They in general make use of mares in their ordinary excursions, experience having taught them that they support fatigue, thirst, and hunger, better than the horses are found to do. They are also less vicious, of a gentler nature, and are not so apt to neigh. They

* Buffon.

are more harmless also among themselves, not so apt to kick or hurt each other, but remain whole days together without the least mischief. The Turks, on the contrary, are not fond of mares; and the Arabians sell them such horses as they do not choose to keep for stallions at home. They preserve the pedigree of their horses with great care, and for several ages back. They know their alliances, and all their genealogy; they distinguish the races by different names, and divide them into three classes. The first is that of the nobles, the ancient breed, and unadulterated on either side; the second is that of the horses of the ancient race, but adulterated; and the third is that of the common and inferior kind. The last they sell at a low price; but those of the first class, and even of the second, amongst which are found horses of equal value to the former, are sold extremely dear. They know, by long experience, the race of a horse by his appearance; they can tell the name, the surname, the colour, and the marks properly belonging to each. When they are not possessed of stallions of the noble race themselves for their mares, they borrow from their neighbours, paying a proper price as with us, and receive a written attestation of the whole. In this attestation is contained the name of the horse and the mare, and their respective genealogies. When the mare has produced her foal, new witnesses are called, and a new attestation signed, in which are described the marks of the foal, and the day noted when it was brought forth. These attestations increase the value of the horse; and they are given to the person who buys him. The most ordinary mare of this race sells for five hundred crowns; there are many that sell for a thousand; and some of the very finest kinds for fourteen or fifteen hundred pounds. As the Arabians have no other house but a tent to live in, this

also serves them for a stable; so that the mare, the foal, the husband, the wife, and the children, lie all together indiscriminately: the little children are often seen upon the body or the neck of the mare, while these continue inoffensive and harmless, permitting them thus to play with and caress them without any injury. The Arabians never beat their horses; they treat them gently; they speak to them, and seem to hold a discourse; they use them as friends; they never attempt to increase their speed by the whip, nor spur them, but in cases of necessity. However, when this happens, they set off with amazing swiftness; they leap over obstacles with as much agility as a buck; and if the rider happens to fall, they are so manageable that they stand still in the midst of their most rapid career. The Arabian horses are of a middle size, easy in their motions, and rather inclined to leanness than fat. They are regularly dressed every morning and evening, and with such care that the smallest roughness is not left upon their skins. They wash the legs, the mane, and the tail, which they never cut, and which they seldom comb, lest they should thin the hair. They give them nothing to eat during the day; they only give them to drink once or twice; and at sunset they hang a bag to their heads, in which there is about half a bushel of clean barley. They continue eating the whole night, and the bag is again taken away the next morning. They are turned out to pasture in the beginning of March, when the grass is pretty high, and at which time the mares are given to the stallion. When the spring is past, they take them again from pasture, and they get neither grass nor hay during the rest of the year; barley is their only food, except now and then a little straw. The mane of the foal is always clipped when about a year or eighteen months old, in order to make it stronger and thick-

er. They begin to break them at two years old, or two years and a half at farthest: they never saddle or bridle them till at that age, and then they are always kept ready saddled at the door of the tent from morning till sunset, in order to be prepared against any surprise. They at present seem sensible of the great advantage their horses are to the country: there is a law, therefore, that prohibits the exportation of the mares; and such stallions as are brought into England are generally purchased on the eastern shores of Africa, and come round to us by the Cape of Good Hope. They are in general less in stature than our own, being not above fourteen, or fourteen hands and a half high; their motions are much more graceful and swifter than of our own horses; but nevertheless their speed is far from being equal: they run higher from the ground; their stroke is not so long and close; and they are far inferior in bottom. Still, however, they must be considered as the first and finest breed in the world, and that from which all others have derived their principal qualifications. It is even probable that Arabia is the original country of horses; since there, instead of crossing the breed, they take every precaution to keep it entire. In other countries they must continually change the races, or their horses would soon degenerate; but there the same blood has passed down through a long succession, without any diminution either of force or beauty.

The race of Arabian horses has spread itself into Barbary among the Moors, and has even extended across that extensive continent to the western shores of Africa. Among the Negroes of Gambia and Senegal, the chiefs of the country are possessed of horses, which, though little, are very beautiful, and extremely manageable. Instead of barley, they are fed in those countries with maize, bruised and re-

duced into meal, and mixed up with milk, when they design to fatten them. These are considered as next to the Arabian horses both for swiftness and beauty, but they are rather still smaller than the former. The Italians have a peculiar sport, in which horses of this breed run against each other. They have no riders, but saddles so formed as to flap against the horses' sides as they move, and thus to spur them forward. They are set to run in a kind of railed walk, about a mile long, out of which they never attempt to escape; but when they once set forward, they never stop, although the walk from one end to the other is covered with a crowd of spectators, which opens and gives way as the horses approach. Our horses would scarcely in this manner face a crowd, and continue their speed without a rider, through the midst of a multitude; and indeed it is a little surprising how, in such a place, the horses find their own way. However, what our English horses may want in sagacity, they make up by their swiftness; and it has been found upon computation, that their speed is nearly one-fourth greater, even carrying a rider, than that of the swiftest Barb without one.

The Arabian breed has been diffused into Egypt as well as Barbary, and into Persia also; where, as we are told by Marcus Paulus, there are studs of ten thousand white mares all together. very fleet, and with the hoof so hard that shoeing is unnecessary. In these countries, they in general give their horses the same treatment that they give in Arabia, except that they litter them upon a bed of their own dung, dried in the sun, and then reduced to powder. When this, which is spread under the horse about five inches thick, is moistened, they dry it again, and spread it as before. The horses of these countries a good deal resemble each other. They are usually of

a slender make; their legs fine, bony, and far apart; a thin mane; a fine crest; a beautiful head; the ear small and well pointed; the shoulder thin; the side rounded, without any unsightly prominence; the croup is a little of the longest, and the tail generally set high. The race of horses, however is much degenerated in Numidia; the natives having been discouraged from keeping the breed up by the Turks, who seize upon all the good horses, without paying the owners the smallest gratuity for their care in bringing them up. The Tingitanians and Egyptians have now, therefore, the fame of rearing the finest horses, both for size and beauty. The smallest of these last are usually sixteen hands high; and all of them shaped, as they express it, with the elegance of an antelope.

Next to the Barb, travellers generally rank the Spanish genette. These horses, like the former, are little, but extremely swift and beautiful. The head is something of the largest; the mane thick; the ears long, but well pointed; the eyes filled with fire; the shoulder thickish, and the breast full and large. The croup round and large; the legs beautiful, and without hair; the pastern a little of the longest, as in the Barb, and the hoof rather too high. Nevertheless, they move with great ease, and carry themselves extremely well. Their most usual colour is black, or a dark bay. They seldom or never have white legs, or white snip. The Spaniards, who have a groundless aversion to these marks, never breed from such as have them. They are all branded on the buttock with the owner's name; and those of the province of Andalusia pass for the best. These are said to possess courage, obedience, grace, and spirit, in a greater degree than even the Barb; and, for this reason, they have been preferred as war horses to those of any other country.

The Italian horses were once more beautiful than they are at present; for they have greatly neglected the breed. Nevertheless, there are still found some beautiful horses among them, particularly among the Neapolitans, who chiefly use them for the draught. In general they have large heads and thick necks. They are also restive, and consequently unmanageable. These faults, however, are recompensed by the largeness of their size, by their spirit, and the beauty of their motion. They are excellent for show, and have a peculiar aptitude to prance.

The Danish horses are of such an excellent size, and so strong a make, that they are preferred to all others for the draught. There are some of them perfectly well shaped; but this is but seldom seen, for in general they are found to have a thick neck, heavy shoulders, long and hollow back, and a narrow croup: however, they all move well, and are found excellent both for parade and war. They are of all colours, and often of whimsical ones, some being streaked like the tiger, or mottled like the leopard.

The German horses are originally from Arabian and Barbary stocks; nevertheless, they appear to be small and ill-shaped; it is said also, that they are weak and washy, with tender hoofs. The Hungarian horses, on the other hand, are excellent for the draught, as well as the saddle. The hussars, who use them in war, usually slit their nostrils; which is done, as it is said, to prevent their neighing, but, perhaps, without any real foundation.

The Dutch breed is good for the draught, and is generally used for that purpose over Europe; the best come from the province of Friezland. The Flanders horses are much inferior to the former; they have most commonly large heads, flat feet, and swollen legs, which are an essential blemish in horses of this kind.

The French horses are of various kinds; but they have few that are good. The best horses of that country come from Limosin: they have a strong resemblance to the Barb, and, like them, are excellent for the chase; but they are slow in coming to perfection; they are to be carefully treated while young, and must not be backed till they are eight years old. Normandy furnishes the next best; which, though not so good for the chase, are yet better for war. In general, the French horses have the fault of being heavy-shouldered, which is opposite to the fault of the Barb, which is too thin in the shoulder, and is consequently apt to be shoulder-slipt.

Having mentioned the horses most usually known in Europe, we pass on to those of more distant countries, of whose horses we can only judge by report. We mentioned the wild horses of America. Such as are tame, if we may credit the latest reports,* are admirable. Great numbers of these are bred up to the chase, and are chiefly kept for this purpose, particularly at Quito. The hunters, as Ulloa informs us, are divided into two classes; one part on foot, the other on horseback: the business of the footmen is to rouse the deer, and that of the horsemen to hunt it down. They all, at break of day, repair to the place appointed, which is generally on the summit of a hill, with every man his greyhound. The horsemen place themselves on the highest peaks, whilst those on foot range the precipices, making a hideous noise, in order to start the deer. Thus the company extend themselves three or four leagues, or more, according to their numbers. On starting any game, the horse which first perceives it sets off, and the rider, being unable to guide or stop him, pursues the chase, sometimes down such a steep slope, that a man on foot with the greatest care

* Ulloa's Voyage, vol. i, p. 464.

could hardly keep his legs: from thence he flies up a dangerous ascent, or along the side of a mountain, so that a person not used to this exercise would think it much safer to throw himself out of the saddle, than commit his life to the precipitate ardour of his horse. The other horses which join in the chase do not wait for the riders to animate them; they set forward immediately upon seeing another at full speed; and it becomes prudent in the rider to give them their way, and at the same time to let them feel the spur, to carry him over the precipices. These horses are backed and exercised to this method of hunting; and their usual pace is trotting.

There are said to be very good horses in the islands of the Archipelago. Those of Crete were in great reputation among the ancients for their swiftness and force; however, at present they are but little used, even in the country itself, because of the unevenness of the ground, which is there very rocky and mountainous. The original horses of Morocco are much smaller than the Arabian breed; however, they are very swift and vigorous. In Turkey there are to be found horses of almost all races, Arabians, Tartars, Hungarians, and those natural to the place. The latter are very beautiful and elegant; they have a great deal of fire, swiftness, and management; but they are not able to support fatigue: they eat little; they are easily heated; and they have skins so sensible, that they can scarcely bear the rubbing of the stirrup. The Persian horses are, in general, the most beautiful and most valuable of all the East. The pastures in the plains of Media, Persepolis, Ardebil, and Derbent, are excellent for the purpose of rearing them; and there were bred in those places vast numbers, by order of the government of Persia, while that country was under any government. Pietro della Valle prefers the horses of Persia to those

of Italy; and informs us, that they are in general of a middle size; and although some are found even of the smallest stature, yet that does not impair their beauty or their strength; yet, in some places, they are found of a very good size, and as large as the English saddle-horses are generally found to be: They have all a thin head, a fine crest, a narrow breast, small ears well placed, the legs fine, the hoof hard, and the croup beautiful; they are docile, spirited, nimble, hardy, courageous, and capable of supporting a very great fatigue; they run very swiftly, without being easily fatigued; they are strong and easily fed, being only supplied with barley and chopped straw; they are put to grass only for six weeks in the spring; they have always the tail at full length, and there is no such thing as geldings among the number; they are defended from the air, as in England, by body-clothes; they are attended with the most punctual exactness; and they are rid generally in a snaffle, without spurs. Great numbers of these are every year transported into Turkey, but chiefly into the East Indies; however, after all, travellers agree that they are not to be compared to the Arabian horses, either for courage, force, or beauty; and that the latter are eagerly sought, even in Persia.

The horses of India are of a very indifferent kind, being weak and washy. Those which are used by the grandees of the country come from Persia and Arabia; they are fed with a small quantity of hay during the day, and at night they have boiled peas mixed with sugar and butter, instead of oats or barley: this nourishment supports them, and gives them strength, otherwise they would soon sink and degenerate. Those naturally belonging to the country are very small and vicious. Some are so very little, that Taverner reports, that the young Mogul prince, at the age of seven or eight, rode one of those little

horses that was not much larger than a greyhound; and it is not long since one of these was brought over into this country, as a present to the Queen, that measures no more than nine hands high, and is not much larger than a common mastiff. It would seem that climates excessively hot are unfavourable to this animal. In this manner the horses of the Gold Coast, and of Guinea, are extremely little, but very manageable. It is a common exercise with the grandees of that country, who are excellent horsemen, to dart out their lances before them upon full gallop, and to catch them again before they come to the ground. They have a sport also on horseback that requires great dexterity in the rider, and a great share of activity in the horse: they strike off a ball, with a battledore, while they are upon a full gallop, and pursuing it, strike it again before it comes to the ground; and this they continue for a mile together, striking sometimes to the right, and sometimes to the left, with amazing speed and agility.

The horses of China are as indifferent as those of India: they are weak, little, ill-shaped, and cowardly. Those of Corea are not above three feet high: almost all the breed there are made geldings, and are so timorous, that they can be rendered no way serviceable in war; so that it may be said, that the Tartar horses were properly the conquerors of China. These, indeed, are very serviceable in war; and although but of a middle size, yet they are surprisingly patient, vigorous, swift, and bold: their hoofs are extremely hard, though rather too narrow; their heads are fine, but rather too little; the neck is long and stiff; the legs of the longest; and yet, with all these faults, they are found to be an excellent breed. The Tartars live with their horses pretty much in the same manner as the Arabians do; they begin to back them at the age of seven or eight months, placing

their children upon them, who manage them even at that early age. By these means they break them, by little and little, till at last, about the age of six or seven years, they are capable of enduring amazing hardships. Thus they have been known to march two or three days without once stopping; to continue five or six without eating any thing except a handful of grass at every eight hours; and, besides, to remain without drinking for four-and-twenty hours. These horses, which are so vigorous in their own country, lose all their strength when they are brought into China or the Indies; but they thrive pretty well in Persia and Turkey. The race of little Tartars towards the north have also a breed of little horses, which they set such a value upon, that it is forbidden to sell them to strangers: these horses have the very same qualities with those of the larger kind, which they probably derive from a similar treatment. There are also very fine horses in Circassia and Mingrelia. There are some greatly esteemed in the Ukraine, in Walachia, Poland, and Sweden; but we have no particular accounts of their excellences or defects.

If we consult the ancients on the nature and qualities of the horses of different countries, we learn, that the Grecian horses, and particularly those of Thessaly, had the reputation of being excellent for war; that those of Achaia were the largest that were known; that the most beautiful came from Egypt, which bred great numbers; that the horses of Ethiopia were not in esteem, owing to the heat of the country; that Arabia and Africa furnished very beautiful horses, and very fit for the course; that those of Italy, and particularly of Apulia, were very good; that in Sicily, Cappadocia, Syria, Armenia, Media, and Persia, there were excellent horses, equally esteemed for their speed and vigour; that those of Sardinia and Corsica, though small, were spirited and

courageous; that those of Spain resembled the Parthian horses, in being very well adapted for war; that in Walachia and Transylvania there were horses with bushy tails and manes hanging down to the ground, which, nevertheless, were extremely swift and active; that the Danish horses were good leapers; those of Scandinavia, though little, were well-shaped, and possessed of great agility; that the Flanders breed was strong: that the Gaulish horses were good for carrying burdens; that the German breeds were so bad, so diminutive, and ill-shaped, that no use could be made of them; that the Swiss and Hungarian horses were good; and lastly, that those of India were very diminutive and feeble.

Such are the different accounts we have of the various races of horses in different parts of the world. I have hitherto omitted making mention of one particular breed, more excellent than any that either the ancients or moderns have produced; and that is our own. It is not without great assiduity, and unceasing application, that the English horses are now become superior to those of any other part of the world, for size, strength, swiftness, and beauty. It was not without great attention and repeated trials of all the best horses in different parts of the world, that we have been thus successful in improving the breed of this animal; so that the English horses are now capable of performing what no others could ever attain to. By a judicious mixture of the several kinds, by the happy difference of our soils, and by our superior skill in management, we have brought this animal to its highest perfection. An English horse, therefore, is now known to excel the Arabian in size and swiftness; to be more durable than the Barb, and more hardy than the Persian. An ordinary racer is known to go at the rate of a mile in two minutes; and we had one instance, in the admi-

rable Childers, of still greater rapidity. He has been frequently known to move above eighty-two feet and a half in a second, or almost a mile in a minute: he has run also round the course of Newmarket, which is very little less than four miles, in six minutes and forty seconds. But what is surprising, few horses have been since found that ever could equal him; and those of his breed have been remarkably deficient.

However this be, no horses can any way equal our own, either in point of swiftness or strength; and these are the qualifications our horsemen seem chiefly to value. For this reason, when the French, or other foreigners, describe our breed, they all mention, as a fault, the awkward and ungainly motion of our horses; they allow them to be very good indeed, but they will not grant them an easy or an elegant carriage.* But these writers do not consider that this seeming want of grace is entirely the result of our manner of breaking them. We consult only speed and despatch in this animal's motions; the French, and other nations, are more anxious for parade and spirit. For this reason we always throw our horses forward, while they put them upon their haunches; we give them an easy swift gait of going, that covers a great deal of ground; they on the contrary, throw them back, giving them a more showy appearance, indeed, but one infinitely less useful. The fault of our manner of breaking is, that the horse is sometimes apt to fall forward; the French managed horse never falls before, but more usually on one side; and for this reason the rider wears stiff boots, to guard his legs against such accidents. However, it would be a very easy matter to give our horses all that grace which foreigners are

* See Buffon's account of our horses.

so fond of; but it would certainly take from their swiftness and durability.

But in what degree of contempt soever foreigners might formerly have held our horses, they have for some time perceived their error, and our English hunters are considered as the noblest and the most useful horses in the world. Our geldings are therefore sent over to the continent in great numbers, and sell at very great prices: as for our mares and stallions, there is a law prohibiting their exportation; and one similar to this is said to have obtained even as early as the times of Athelstan, who prohibited their exportation, except where designed as presents.

Roger de Belegme, created Earl of Shrewsbury by William the Conqueror,* is the first who is recorded to have made attempts towards the mending our native breed. He introduced Spanish stallions into his estate at Powisland in Wales, from which that part of the country was for many ages after famous for a swift and generous race of horses: however, at that time strength and swiftness were more regarded than beauty; the horses' shapes in time of action being entirely hid by a coat of armour, which the knights then usually put upon them, either by way of ornament or defence.

The number of our horses in London alone, in the time of King Stephen, is said to have amounted to twenty thousand. However, long after, in the times of Queen Elizabeth, the whole kingdom could not supply two thousand horses to form our cavalry. At present the former numbers seem revived; so that in the late war we furnished out above thirteen thousand horsemen, and could, if hard pushed, supply above four times that number. How far this

* British Zoology, vol. i, p. 4. To this work I am indebted for several particulars with regard to the native animals of this island.

great increase of horses among us may be beneficial or otherwise, is not the proper business of the present page to discuss; but certain it is, that where horses increase in too great a degree, men must diminish proportionably; as that food which goes to supply the one, might very easily be converted into nourishment to serve the other. But perhaps it may be speculating too remotely, to argue for the diminution of their numbers upon this principle, since every manufacture we export into other countries takes up room, and may have occupied that place which in a state of greater simplicity might have given birth and subsistence to mankind, and have added to population.

Be this as it will, as we have been at such expense and trouble to procure an excellent breed of horses, it is not now to be expected that we should decline the advantages arising from it, just when in our possession. It may be, therefore, the most prudent measure in our legislature to encourage the breed, as an useful branch of commerce, and a natural defence to the country. But how far this end is answered by the breeding up of racers, is what most persons versed in this subject are very apt to question. They assert, that the running horse, as the breed has been for a long time refined, is unfit for any other service than that of the course, being too slight either for the road, the chase, or the combat; and his joints so delicately united, as to render him subject to the smallest accidents. They therefore conclude, that less encouragement given to racing would be a means of turning us from breeding rather for swiftness than strength, and that we should thus be again famous for our strong hunters, which they say are wearing out from among us.

How far this may be fact, I will not take upon me to determine, being but little versed in a subject that

1. Ass — 2. Ox — 3. Sheep.

does not properly come within the compass of natural history. Instead, therefore, of farther expatiating on this well known animal's qualifications, upon which many volumes might easily be written, I will content myself with just mentioning the description of Camerarius, in which he professes to unite all the perfections which a horse ought to be possessed of. "It must," says he, "have three parts like those of a woman; the breast must be broad, the hips round, and the mane long: it must in three things resemble a lion; its countenance must be fierce, its courage must be great, and its fury irresistible: it must have three things belonging to the sheep; the nose, gentleness, and patience: it must have three of a deer; head, leg, and skin: it must have three of a wolf; throat, neck, and hearing: it must have three of a fox; ear, tail, and trot: three of a serpent: memory, sight, and flexibility: and, lastly, three of a hare; running, walking, and perseverance."

CHAPTER VII.

OF THE ASS.*

ALTHOUGH this animal is very easily distinguished from the horse at first sight, yet, upon closer inspection, the similitude between them is very striking. They have both a similar outline in the external parts; the same conformation within. One would be led, from the great resemblance there is between them, to suppose them of the same species, and that the ass was only a horse degenerated; however, they are perfectly distinct, and there is an in-

* Many parts of this account are extracted from Daubenton and Buffon, which I mention here to avoid troubling the reader with a multiplicity of quotations.

separable line drawn between them, for the mule they produce is barren. This seems to be the barrier between every species of animals; this keeps them asunder, and preserves the unities of their form. If the mule, or the monster bred between two animals whose form nearly approaches, is no longer fertile, we may then conclude that these animals, however resembling, are of different kinds. Nature has providently stopped the fruitfulness of these ill-formed productions, in order to preserve the form of every animal uncontaminated: were it not for this, the races would quickly be mixed with each other, no one kind would preserve its original perfection, every creature would quickly degenerate, and the world would be stocked with imperfection and deformity.

The horse and the ass, therefore, though so nearly approaching in form, are of two distinct kinds, different in their natures; and were there but one of each kind, both races would then be extinguished. Their shapes and their habits may indeed be very nearly alike; but there is something in every animal, besides its conformation or way of life, that determines its specific nature. Thus there is much greater resemblance between the horse and the ass, than between the sheep and the goat; and yet the latter produce an animal that is by no means barren, but which quickly reproduces an offspring resembling the sheep, while the mule of the former is marked with certain sterility. The goat and the sheep may be therefore said to be of one kind, although so much unlike in figure; while the horse and the ass are perfectly distinct, though so closely resembling. It has indeed been said by Aristotle, that their male is sometimes prolific; this, however, has not been confirmed by any other testimony, although there has elapsed a period of near two thousand years to collect the evidence.

But what tends to put the subject out of dispute is, that the two animals are found in a state of nature entirely different. The Onager, or wild ass, is seen in still greater abundance than the wild horse; and the peculiarities of its kind are more distinctly marked than in those of the tame one. Had it been a horse degenerated, the likeness would be stronger between them the higher we went to the original stock from whence both have been supposed to be sprung. The wild animals of both kinds would, in such a case, resemble each other much more than those of the tame kind, upon whom art has for a succession of ages been exercising all its force, and producing strange habits and new alterations. The contrary, however, obtains, and the wild ass is even more assinine, if I may so express it, than that bred in a state of domestic servitude: and has even a natural aversion to the horse, as the reader will shortly learn.

The wild ass has by some writers been confounded with the zebra, but very improperly, for they are of a very different species. The wild ass is not streaked like the zebra, nor is his shape so beautiful: his figure is pretty much the same as that of the common ass, except that he is of a brighter colour, and has a white list running from his head to his tail. This animal is found wild in many islands of the Archipelago, particularly in that of Cerigo. There are many wild asses in the deserts of Libya and Numidia, that run with such amazing swiftness that scarcely even the coursers of the country can overtake them. When they see a man, they set up a horrid braying, and stop short altogether, till he approaches near them; they then, as if by common consent, fly off with great speed; and it is upon such occasions that they generally fall into the traps which are previously prepared to catch them. The natives

take them chiefly upon account of their flesh, which they esteem as delicious eating; and for their skins, of which that kind of leather is made which is called *shagreen*.

Olearius relates, that the monarch of Persia invited him on a certain day to be present at an entertainment of a very peculiar nature, which was exhibited in a small building near the palace resembling a theatre. After a collation of fruits and sweet-meats, more than thirty of these wild asses were driven into the area, among which the monarch disharged several shot, and some arrows, and in which he was imitated by some of the rest of his attendants. The asses finding themselves wounded, and no way of escaping, instantly began to attack each other, biting with great fierceness, and braying terribly. In this manner they continued their mutual animosity, while the arrows were poured in from above until they were all killed; upon which they were ordered to be taken, and sent to the king's kitchen at Ispahan. The Persians esteem the flesh of this animal so highly, that its delicacy is even become a proverb among them. What may be the taste of the wild ass's flesh we are unable to say, but certain it is, that the flesh of the tame ass is the worst that can be obtained, being dryer, more tough, and more disagreeable than horse flesh. Galen even says that it is very unwholesome. Yet we should not judge hastily upon the different tastes of different people, in the preference they give to certain meats. The climate produces very great changes in the tenderness and the savour of several viands: that beef, for instance, which is so juicy and good in England, is extremely tough and dry when killed under the Line; on the contrary, that pork which is with us so unpalatable in summer, in the warmer latitudes, where it is always hotter than here, is the finest eating they have, and much preferable to any hog's flesh in Europe.

The ass, like the horse, was originally imported into America by the Spaniards, and afterwards by other nations. That country seems to have been peculiarly favourable to this race of animals, and where they have run wild, they have multiplied in such numbers, that in some places they are become a nuisance.* In the kingdom of Quito, the owners of the grounds where they are bred suffer all persons to take away as many as they can, on paying a small acknowledgment, in proportion to the number of days their sport lasts. They catch them in the following manner: A number of persons go on horseback, and are attended by Indians on foot; when arrived at the proper places, they form a circle in order to drive them into some valley, where at full speed they throw the noose, and endeavour to halter them. Those creatures, finding themselves enclosed, make very furious efforts to escape; and if only one forces his way through, they all follow with an irresistible impetuosity. However, when noosed, the hunters throw them down and secure them with fetters, and thus leave them till the chase is over. Then, in order to bring them away with greater facility, they pair them with tame beasts of the same kind; but this is not easily performed, for they are so remarkably fierce that they often hurt the persons who undertake to manage them. They have all the swiftness of horses, and neither declivities nor precipices can retard their career. When attacked, they defend themselves with their heels and mouth with such activity, that without slackening their pace they often maim their pursuers. But the most remarkable property in these creatures is, that after carrying their first load, their celerity leaves them, their dangerous ferocity is lost, and they soon contract the stupid look and dullness peculiar to the assinine spe-

* Ulloa, vol. i, p. 316.

cies. It is also observable, that these creatures will not permit a horse to live among them. They always feed together; and if a horse happens to stray into the place where they graze, they all fall upon him, and without giving him the liberty of flying, they bite and kick him till they leave him dead upon the spot.

Such is this animal in its natural state, swift, fierce, and formidable: but, in his state of tameness, the ass presents a very different picture; the moment his native liberty is repressed, he seems entirely to give up all claims to freedom, and he assumes a patience and submission even humbler than his situation. He is, in a state of tameness, the most gentle and quiet of all animals. He suffers with constancy, and perhaps with courage, all the ill treatment that cruelty and caprice are pleased to inflict. He is temperate with regard to the quantity and the quality of his provision. He is contented with the most neglected weeds, and makes his humble repast upon what the horse and other animals leave behind. If he gives the preference to any vegetable, it is to the plantain, for which he is often seen to neglect every other herb in the pasture: but he is chiefly delicate with respect to his water; he drinks only at the clearest brooks, and chiefly those to which he has been accustomed. He drinks as soberly as he eats, and never, like the horse, dips his nose into the stream. As he is seldom saddled, he frequently rolls himself upon the grass; and lies down, for this purpose, as often as he has an opportunity, without minding what becomes of his burden. He never rolls like the horse, in the mud; he even fears to wet his feet, and turns out of his way to avoid the dirty parts of a road.

When very young, the ass is sprightly, and even tolerably handsome; but he soon loses these quali-

fications, either by age or bad treatment, and he becomes slow, stupid, and headstrong. He seems to show no ardour, except for the female, having been often known to die after the covering. The she-ass is not less fond of her young than the male is of her; and we are assured that she will cross fire and water to protect or rejoin it. This animal is sometimes not less attached to his owner, by whom he is too often abused. He scents him at a distance, and distinguishes him from others in a crowd; he knows the ways he has passed, and the places where he inhabits.

When overloaded, the ass shows the injustice of his master, by hanging down his head and lowering his ears; when he is too hard pressed, he opens his mouth and draws back his lips in a very disagreeable manner. If his eyes are covered he will not stir a step; and if he is laid down in such a manner that one eye is covered with the grass while the other is hidden with a stone, or whatever is next at hand, he will continue fixed in the same situation, and will not so much as attempt to rise to free himself from those slight impediments. He walks, trots, and gallops like a horse; but although he sets out very freely at first, yet he is soon tired, and then no beating will make him mend his pace. It is in vain that his unmerciful rider exerts his whip or his cudgel; the poor little animal bears it all with patience, and without a groan, and conscious of his own imbecility, does not offer even to move.

Notwithstanding the stupid heaviness of his air, he may be educated with as much ease as any other animal; and several have been brought up to perform, and exhibited as a show. In general, however, the poor animal is entirely neglected. Man despises this humble, useful creature, whose efforts are exerted to please him, and whose services are too cheaply pur-

chased. The horse is the only favourite, and upon him alone all expense and labour are bestowed. He is fed, attended, and stabled, while the ass is abandoned to the cruelty of the lowest rustics, or even to the sport of children, and instead of gaining by the lessons he receives, is always a loser. He is conducted along by blows; he is insulted by unnecessary stripes; he is overloaded by the lazy; and, being generally the property of the poor, he shares with them in their wants and their distresses. Thus this faithful animal, which, were there no horses, would be the first of the quadruped kind in our esteem, is now considered as nothing; his properties and qualifications being found in a higher degree elsewhere, he is entirely disregarded; and, from being the second, he is degraded into one of the most useless of the domestic quadrupeds.

For this reason, very little care has been taken to improve the breed; it is suffered to degenerate; and it is probable, that, of all other animals, this alone is rendered feebler and more diminutive by being in a state of domestic servitude. The horse, the cow, and the sheep, are rendered larger by the assiduity of man: the ass is suffered to dwindle every generation, and particularly in England, where it is probable that, but for the medicinal qualities of its milk, the whole species would have ere now been extinguished. Nevertheless, we have good reasons to believe, that, were the same care bestowed on the ass that is spent upon the horse, were the same industry used in crossing the breed and improving it, we should see the ass become, from his present mean state, a very portly and serviceable animal; we should find him rival the horse in some of his perfections, and exceed him in others. The ass, bulk for bulk, is stronger than the horse; is more sure-footed; and, though more slow in his motions, he is much less apt to start out of the way.

The Spaniards, of all people in Europe, seem alone to be acquainted with the value of the ass. They take all proper precautions to improve the breed; and I have seen a jack-ass, from that country, above fifteen hands high. This animal, however, seems originally a native of Arabia. A warm climate is known to produce the largest and the best; their size and spirit decline in proportion as they advance into colder regions.

Though now so common in all parts of England, the ass was entirely lost amongst us during the reign of Queen Elizabeth. Hollingshed informs us that our land did yield no asses.* However, there are accounts of their being common in England before that time. In Sweden they are at present a sort of rarity; nor does it appear by the last history of Norway that they have yet reached that country. It is in the hotter climates alone that we are to look for the original of this serviceable creature. In Guinea, they are larger and more beautiful than even the horses of the same country. In Persia, they have two kinds: one of which is used for burdens, being slow and heavy; the other, which is kept for the saddle, being smooth, stately, and nimble. They are managed as horses, only that the rider sits nearer the crupper, and they are taught to amble like them. They generally cleave their nostrils to give them more room for breathing, and many of these are sold for forty or fifty pounds.

The ass is a much more hardy animal than the horse, and liable to fewer diseases. Of all animals covered with hair, he is the least subject to vermin, for he has no lice, probably owing to the dryness and the hardness of his skin. Like the horse he is three or four years in coming to perfection, he lives till twenty to twenty-five, sleeps much less than the horse,

* British Zoology, vol. i, p. 11.

and never lies down for that purpose, unless very much tired. The she-ass goes above eleven months with young, and never brings forth more than one at a time. The mule may be engendered either between a horse and a she-ass, or between a jack-ass and a mare. The latter breed is every way preferable, being larger, stronger, and better shaped. It is not yet known whether the animal called the Gimerro be one of these kinds, or, as is asserted, bred between the ass and the bull. While naturalists affirm the impossibility of this mixture, the natives of the Alpine countries, where this animal is bred, as strongly insist upon its reality. The common mule is very healthy, and will live above thirty years, being found very serviceable in carrying burdens, particularly in mountainous and stony places, where horses are not sure-footed. The size and strength of our asses is at present greatly improved by the importation of Spanish jack-asses; and it is probable we may come in time to equal the Spaniards in breeding them, where it is not uncommon to give fifty or sixty guineas for a mule; and, indeed, in some mountainous countries, the inhabitants cannot well do without them. Their manner of going down the precipices of the Alps, or the Andes, is very extraordinary; and with it we will conclude their history. In these passages, on one side are steep eminences, and on the other frightful abysses; and, as they generally follow the direction of the mountain, the road, instead of lying in a level, forms at every little distance steep declivities of several hundred yards downward. These can only be descended by mules; and the animal itself seems sensible of the danger, and the caution that is to be used in such descents. When they come to the edge of one of these descents, they stop without being checked by the rider; and if he inadvertently attempts to spur them on, they continue im-

moveable. They seem all this time ruminating on the danger that lies before them, and preparing themselves for the encounter. They not only attentively view the road, but tremble and snort at the danger. Having prepared for the descent, they place their fore-feet in a posture, as if they were stopping themselves; they then also put their hinder feet together, but a little forward, as if they were going to lie down. In this attitude, having taken as it were a survey of the road, they slide down with the swiftness of a meteor. In the mean time, all the rider has to do is to keep himself fast on the saddle without checking the rein, for the least motion is sufficient to disorder the equilibrium of the mule; in which case they both unavoidably perish. But their address in this rapid descent is truly wonderful; for in their swiftest motion, when they seem to have lost all government of themselves, they follow exactly the different windings of the road, as if they had previously settled in their minds the route they were to follow, and taken every precaution for their safety. In this journey, the natives, who are placed along the sides of the mountains, and hold by the roots of the trees, animate the beast with shouts, and encourage him to perseverance. Some mules, after being long used to these journeys, acquire a kind of reputation for their safety and skill; and their value rises in proportion to their fame.*

CHAPTER VIII.

OF THE ZEBRA.

THERE are but three animals of the horse kind: the horse, which is the most stately and courageous;

* Ulloa, vol. i.

the ass, which is the most patient and humble; and the zebra, which is the most beautiful, but at the same time the wildest animal in nature. Nothing can exceed the delicate regularity of this creature's colour, or the lustrous smoothness of its skin; but, on the other hand, nothing can be more timid or more untameable.*

It is chiefly a native of the southern parts of Africa; and there are whole herds of them often seen feeding in those extensive plains that lie towards the Cape of Good Hope. However, their watchfulness is such, that they will suffer nothing to come near them; and their swiftness so great, that they readily leave every pursuer far behind. The zebra, in shape, rather resembles the mule, than the horse or the ass. It is rather less than the former, and yet larger than the latter. Its ears are not so long as those of the ass, and yet not so small as in the horse kind. Like the ass, its head is large, its back straight, its legs finely placed, and its tail tufted at the end; like the horse, its skin is smooth and close, and its hind quarters round and fleshy. But its greatest beauty lies in the amazing regularity and elegance of its colours. In the male, they are white and brown; in the female, white and black. These colours are disposed in alternate stripes over the whole body, and with such exactness and symmetry, that one would think nature had employed the rule

* [To these may be added the Quacha, or Quagga. This animal, till of late, was supposed to be the female of the zebra; but recent observations prove that the male and female zebra are marked alike, and the quagga is now acknowledged to be a distinct species. It is about the same size as the zebra, and striped like it on the head and body, but with fewer lines. The flanks are spotted; the rump is plain: the ground-colour of the head, neck, body, and rump, a bright bay: the belly, thighs, and legs are white, and free from all marks. It differs likewise from the zebra in being thicker and stronger made, and in being more docile; one of them having been so far broke by a Dutch colonist at the Cape, as to draw in a cart.]

and compass to paint them. These stripes, which, like so many ribands, are laid all over its body, are narrow, parallel, and exactly separated from each other. It is not here, as in other party-coloured animals, where the tints are blended into each other; every stripe here is perfectly distinct, and preserves its colour round the body, or the limb, without any diminution. In this manner are the head, the body, the thighs, the legs, and even the tail and the ears, beautifully streaked, so that at a little distance one would be apt to suppose that the animal was dressed out by art, and not thus admirably adorned by nature.

In the male zebra, the head is striped with fine bands of black and white, which in a manner centre in the forehead. The ears are variegated with a white and dusky brown. The neck has broad stripes of the same dark brown running round it, leaving narrow white stripes between. The body is striped also across the back with broad bands, leaving narrower spaces of white between them, and ending in points at the sides of the belly, which is white, except a black line pectinated on each side, reaching from between the fore-legs, along the middle of the belly, two-thirds of its length. There is a line of separation between the trunk of the body and the hinder quarters, on each side; behind which, on the rump, is a plat of narrow stripes, joined together by a stripe down the middle, to the end of the tail. The colours are different in the female; and in none the stripes seem entirely to agree in form, but in all they are equally distinct; the hair equally smooth and fine; the white, shining and unmixed; and the black, or brown, thick and lustrous.

Such is the beauty of this creature, that it seems by nature fitted to satisfy the pride and the pleasure of man; and formed to be taken into his service. Hitherto, however, it appears to have disdained ser-

vitude, and neither force nor kindness have been able to wean it from its native independence and ferocity. But this wildness might, perhaps, in time be surmounted; and it is probable the horse and the ass, when first taken from the forest, were equally obstinate, fierce, and unmanageable. M. Buffon informs us, that the zebra from which he took his description could never be entirely mastered, notwithstanding all the efforts which were tried to tame it. They continued, indeed, to mount it, but then with such precautions as evidently showed its fierceness, for two men were obliged to hold the reins while the third ventured upon its back; and even then it attempted to kick whenever it perceived any person approaching. That which is now in the Queen's menagerie, at Buckingham-Gate, is even more vicious than the former; and the keeper who shows it, takes care to inform the spectators of its ungovernable nature. Upon my attempting to approach, it seemed quite terrified, and was preparing to kick, appearing as wild as if just caught, although taken extremely young, and used with the utmost indulgence. Yet still it is most probable that this animal, by time and assiduity, could be brought under subjection. As it resembles the horse in form, without all doubt it has a similitude of nature, and only requires the efforts of an industrious and skilful nation to be added to the number of our domestics. It is not now known what were the pains and dangers which were first undergone to reclaim the breed of horses from savage ferocity; these, no doubt, made an equal opposition; but by being opposed by an industrious and enterprising race of mankind, their spirit was at last subdued, and their freedom restrained. It is otherwise with regard to the zebra, it is the native of countries where the human inhabitants are but little raised above the quadruped. The

natives of Angola, or Caffraria, have no other idea of advantage from horses but as they are good for food; neither the fine stature of the Arabian courser, nor the delicate colourings of the zebra, have any allurements to a race of people who only consider the quantity of flesh, and not its conformation. The delicacy of the zebra's shape, or the painted elegance of its form, are no more regarded by such, than by the lion that makes it his prey. For this reason, therefore, the zebra may hitherto have continued wild, because it is the native of a country where there have been no successive efforts made to reclaim it. All pursuits that have been hitherto instituted against it, were rather against its life than its liberty: the animal has thus been long taught to consider man as its most mortal enemy; and it is not to be wondered that it refuses to yield obedience, where it has so seldom experienced mercy. There is a kind of knowledge in all animals, that I have often considered with amazement; which is, that they seem perfectly to know their enemies, and to avoid them. Instinct, indeed, may teach the deer to fly from the lion, or the mouse to avoid the cat: but what is the principle that teaches the dog to attack the dog-butcher wherever he sees him? In China, where the killing and dressing dogs is a trade, whenever one of these people move out, all the dogs of the village, or the street, are sure to be after him. This I should hardly have believed, but that I have seen more than one instance of it among ourselves. I have seen a poor fellow, who made a practice of stealing and killing dogs for their skins, pursued in full cry for three or four streets together by all the bolder breed of dogs, while the weaker flew from his presence with affright. How these animals could thus find out their enemy, and pursue him, appears I own unaccountable, but such is the fact; and it not

only obtains in dogs, but in several other animals, though perhaps to a less degree. This very probably may have been, in some measure, a cause that has hitherto kept the zebra in its state of natural wildness; and in which it may continue, till kinder treatment shall have reconciled it to its pursuers.

It is very likely, therefore, as a more civilized people are now placed at the Cape of Good Hope, which is the chief place where this animal is found, that we may have them tamed and rendered serviceable. Nor is its extraordinary beauty the only motive we have for wishing this animal among the number of our dependants: its swiftness is said to surpass that of all others; so that the speed of a zebra is become a proverb among the Spaniards and Portuguese. It stands better upon its legs also than the horse, and is consequently stronger in proportion. Thus, if by proper care we improved the breed, as we have in other instances, we should probably, in time, come to have a race as large as the horse, as fleet, as strong, and much more beautiful.

The zebra, as was said, is chiefly a native of the Cape of Good Hope. It is also found in the kingdom of Angola; and, as we are assured by Lopez, in several provinces also of Barbary. In those boundless forests it has nothing to restrain its liberty; it is too shy to be caught in traps, and therefore seldom taken alive. It would seem, therefore, that none of them have ever been brought into Europe that were caught sufficiently young, so as to be untinctured by their original state of wildness. The Portuguese, indeed, pretend that they have been able to tame them, and that they have sent four from Africa to Lisbon, which were so far brought under as to draw the king's coach;* they add, that the person who sent them over had the office of notary conferred upon

* Dapper.

him for his reward, which was to remain to him and his posterity for ever: but I do not find this confirmed by any person who says he saw them. Of those which were sent to Brazil, not one could be tamed; they would permit one man only to approach them; they were tied up very short; and one of them, which had by some means got loose, actually killed his groom, having bitten him to death.* Notwithstanding this, I believe, were the zebra taken up very young, and properly treated, it might be rendered as tame as any other animal; and Merolla, who saw many of them, asserts, that when tamed, which he speaks of as being common enough, they are not less estimable for their swiftness than their beauty.

This animal, which is neither to be found in Europe, Asia, or America, is nevertheless very easily fed. That which came over into England some years ago would eat almost any thing, such as bread, meat, and tobacco; that which is now amongst us subsists entirely upon hay. As it so nearly resembles the horse and the ass in structure, so it probably brings forth annually as they do. The noise they make is neither like that of a horse nor an ass, but more resembling the confused barking of a mastiff dog. In the two which I saw, there was a circumstance that seems to have escaped naturalists; which is, that the skin hangs loose below the jaw upon the neck, in a kind of dewlap, which takes away much from the general beauty. But whether this be a natural or accidental blemish, I will not take upon me to determine.

These animals are often sent as presents to the princes of the East. We are told that one of the governors of Batavia gave a zebra, which had been sent to him from Africa, to the emperor of Japan, for which he received as an equivalent for the Company a present to the value of sixty thousand crowns.†

* Pyrard. tom. ii, p. 376. † Navendorf.

Teller also relates, that the Great Mogul gave two thousand ducats for one of them; and it is frequent with the African ambassadors to the court of Constantinople, to bring some of these animals with them as presents for the Grand Signior.

CHAPTER IX.

OF RUMINATING ANIMALS.

Of all animals, those that chew the cud are the most harmless, and the most easily tamed. As they live entirely upon vegetables, it is neither their interest nor their pleasure to make war upon the rest of the brute creation: content with the pastures where they are placed, they seldom desire to change, while they are furnished with a proper supply; and fearing nothing from each other, they generally go in herds for their mutual security. All the fiercest of the carnivorous kinds seek their food in gloomy solitude; these, on the contrary, range together; the very meanest of them are found to unite in each other's defence; and the hare itself is a gregarious animal in those countries where it has no other enemies but the beasts of the forest to guard against.

As the food of ruminant animals is entirely of the vegetable kind, and as this is very easily procured, so these animals seem naturally more indolent and less artful than those of the carnivorous kinds; and as their appetites are more simple, their instincts seem to be less capable of variation. The fox or the wolf are for ever prowling; their long habits of want give them a degree of sharpness and cunning; their life is a continued scene of stratagem and escape: but the patient ox, or the deer, enjoy the repast that na-

ture has abundantly provided certain of subsistence, and contest with security.

As nature has furnished these animals with an appetite for such coarse and simple nutriment, so she has enlarged the capacity of the intestines to take in a greater supply. In the carniverous kinds, as their food is nourishing and juicy, their stomachs are but small and their intestines short; but in these, whose pasture is coarse, and where much must be accumulated before any quantity of nourishment can be obtained, their stomachs are large and numerous, and their intestines long and muscular. The bowels of a ruminating animal may be considered as an elaboratory, with vessels in it fitted for various transmutations. It requires a long and tedious process before grass can be transmuted into flesh; and for this purpose, nature in general has furnished such animals as feed upon grass with four stomachs, through which the food successively passes, and undergoes the proper separations.

Of the four stomachs with which ruminant animals are furnished, the first is called the *paunch*, which receives the food after it has been slightly chewed; the second is called the *honeycomb*, and is properly nothing more than a continuation of the former: these two, which are very capacious, the animal fills as fast as it can, and then lies down to ruminate, which may be properly considered as a kind of vomiting without effort or pain. The two stomachs above mentioned being filled with as much as they can contain, and the grass, which was slightly chewed beginning to swell with the heat of the situation, it dilates the stomachs, and these again contract upon their contents. The aliment, thus squeezed, has but two passages to escape at; one into the third stomach, which is very narrow; and the other back, by the gullet, into the mouth, which is wider. The

greatest quantity, therefore, is driven back through the largest aperture into the mouth to be chewed a second time; while a small part, and that only the most liquid, is driven into the third stomach, through the orifice which is so small. The food which is driven to the mouth, and chewed a second time, is thus rendered more soft and moist, and becomes at last liquid enough to pass into the conduit that goes to the third stomach, where it undergoes a still farther comminution. In this stomach, which is called the *manyfold*, from the number of its leaves, all which tend to promote digestion, the grass has the appearance of boiled spinach, but not yet sufficiently reduced so as to make a part of the animal's nourishment; it requires the operation of the fourth stomach for this purpose, where it undergoes a complete maceration, and is separated to be turned into chyle.

But nature has not been less careful in another respect, in fitting the intestines of these animals for their food. In the carniverous kinds they are thin and lean; but in ruminating animals they are strong, fleshy, and well covered with fat. Every precaution seems taken that can help their digestion: their stomach is strong and muscular, the more readily to act upon its contents; their intestines are lined with fat, the better to preserve their warmth; and they are extended to a much greater length, so as to extract every part of that nourishment which their vegetable food so scantily supplies.

In this manner are all quadrupeds of the cow, the sheep, or the deer kind, seen to ruminate, being thus furnished with four stomachs for the macerating of their food. These, therefore, may most properly be called the ruminant kinds, although there are many others that have this quality in a less observable degree. The rhinoceros, the camel, the horse, the rabbit, the marmot, and the squirrel, all chew the cud

by intervals, although they are not furnished with stomachs like the former. But not these alone, there are numberless other animals that appear to ruminate; not only birds, but fishes and insects. Among birds are the pelican, the stork, the heron, the pigeon, and the turtle; these have a power of disgorging their food to feed their young. Among fishes are lobsters, crabs, and that fish called the *dorado*. The salmon also is said to be of this number; and, if we may believe Ovid, the Scarus likewise; of which he says,*

> Of all the fish that graze beneath the flood,
> He *only* ruminates his former food.

Of insects, the ruminating tribe is still larger: the mole, the cricket, the wasp, the drone, the bee, the grasshopper, and the beetle. All these animals either actually chew the cud, or seem at least to ruminate. They have the stomach composed of muscular fibres, by means whereof the food is ground up and down, in the same manner as in those which are particularly distinguished by the appellation of ruminants.

But not these alone; men themselves have been often known to ruminate, and some even with pleasure. The accounts of these calamities, for such I must consider them, incident to our fellow-creatures, are not very pleasant to read; yet I must transcribe a short one, as given us by Slare in the Philosophical Transactions, as it may in some measure show the satisfaction which the lower tribes of animals enjoy while they ruminate. The man in question was a citizen of Bristol, of about twenty years of age, and what seemed more extraordinary still, of a ruminating family, for his father was frequently subject

* At contra herbosa pisces laxantur arena
Ut scarus epastas *solus* qui ruminat escas.

to the same infirmity, or amusement, as he himself perhaps would call it. This young man usually began to chew his meat over again within about a quarter of an hour after eating. His ruminating after a full meal generally lasted about an hour and a half; nor could he sleep until his task was performed. The victuals upon the return tasted even more pleasantly than at first, and returned as if they had been beaten up in a mortar. If he ate a variety of things, that which he ate at first came up again first; and if this return was interrupted for any time, it produced sickness and disorder, and he was never well till it returned. Instances of this kind, however, are rare and accidental; and it is happy for mankind that they are so. Of all other animals, we spend the least time in eating: this is one of the great distinctions between us and the brute creation; and eating is a pleasure of so low a kind, that none but such as are nearly allied to the quadruped desire its prolongation.

CHAPTER X.

OF QUADRUPEDS OF THE COW KIND.

Of all ruminant animals, those of the Cow kind deserve the first rank, both for their size, their beauty and their services. The horse is more properly an animal belonging to the rich; the sheep chiefly thrives in a flock, and requires attendance; but the cow is more especially the poor man's pride, his riches, and his support. There are many of our peasantry that have no other possession but a cow; and even of the advantages resulting from this most useful creature, the poor are but the nominal pos-

sessors. Its flesh they cannot pretend to taste, since then their whole riches are at once destroyed; its calf they are obliged to fatten for sale, since veal is a delicacy they could not make any pretensions to; its very milk is wrought into butter and cheese for the tables of their masters; while they have no share even in their own possession, but the choice of their market. I cannot bear to hear the rich crying out for liberty while they thus starve their fellow creatures; and feed them up with an imaginary good, while they monopolize the real benefits of nature.

In those countries where the men are under better subordination, this excellent animal is of more general advantage. In Germany, Poland, and Switzerland, every peasant keeps two or three cows, not for the benefit of his master, but for himself. The meanest of the peasants there kills one cow at least for his own table, which he salts and hangs up, and thus preserves as a delicacy all the year round. There is scarcely a cottage in those countries that is not hung round with these marks of hospitality; and which often make the owner better contented with hunger, since he has it in his power to be luxurious when he thinks proper. A piece of beef hung up there is considered as an elegant piece of furniture, which though seldom touched, at least argues the possessor's opulence and ease. But it is very different for some years past, in this country, where our lower rustics at least are utterly unable to purchase meat any part of the year, and by them even butter is considered as an article of extravagance.

'The climate and pasture of Great Britain, however, is excellently adapted to this animal's moderate nature; and the verdure and the fertility of our plains are perfectly suited to the manner of its feeding, for wanting the upper fore-teeth, it loves to

graze on a high rich pasture.* This animal seems but little regardful of the quality of its food, provided it be supplied in sufficient abundance; it makes no particular distinctions in the choice of its herbage, but indiscriminately and hastily devours the proper quantity. For this reason, in our pastures, where the grass is rather high than succulent, more flourishing than nutritious, the cow thrives admirably; and there is no part of Europe where the tame animal grows larger, yields more milk, and more readily fattens, than with us.

Our pastures supply them with abundance, and they in return enrich the pasture; for, of all animals, the cow seems to give back more than it takes from the soil. The horse and the sheep are known in a course of years, to impoverish the ground. The land where they have fed becomes weedy, and the vegetables coarse and unpalatable: on the contrary, the pasture where the cow has been bred, acquires a finer, softer surface, and becomes every year more beautiful and even. The reason is, that the horse being furnished with fore-teeth in the upper jaw, nips the grass closely, and, therefore, only chooses that which is the most delicate and tender; the sheep also, though with respect to its teeth formed like the cow, only bites the most succulent parts of the herbage: these animals, therefore, leave all the high weeds standing; and while they cut the finer grass too closely, suffer the ranker herbage to vegetate and overrun the pasture. But it is otherwise with the cow; as its teeth cannot come so close to the ground as those of the horse, nor so readily as those of the sheep, which are less, it is obliged to feed upon the tallest vegetables that offer; thus it eats

[* Quadrupeds of the cow kind have the horns hollow within, and turned forward in the form of crescents: they have eight fore-teeth in the under jaw, but none in the upper, their place being supplied by a hard membrane; and they have no canine teeth in either jaw.

them all down, and in time levels the surface of the pasture.

The age of the cow is known by the teeth and horns. This animal is furnished with eight cutting teeth in the lower jaw; at the age of ten months, the two middlemost of these fall out, and are replaced by others, that are not so white, but broader; at the age of sixteen months, the two next milk-white teeth fall out likewise, and others come up in their room: thus, at the end of every six months the creature loses and gains, till at the age of three years, all the cutting teeth are renewed, and then they are long, pretty white, and equal; but in proportion as the animal advances in years, they become irregular and black, their inequalities become smoother, and the animal less capable of chewing its food. Thus the cow often declines from this single cause; for, as it is obliged to eat a great deal to support life, and as the smoothness of the teeth makes the difficulty of chewing great, a sufficient quantity of food cannot be supplied to the stomach. Thus the poor animal sinks in the midst of plenty, and every year grows leaner and leaner till it dies.

The horns are another, and a surer method of determining this animal's age. At four years of age, the cow has small pointed neat smooth horns, thickest near the head; at five, the horns become larger, and are marked round with the former year's growth. Thus while the animal continues to live, the horns continue to lengthen; and every year a new ring is added at the root; so that allowing three years before their appearance, and then reckoning the number of rings; we have, in both together, the animal's age exactly.

As we have, indisputably, the best breed of horned cattle of any in Europe, so it was not without the same assiduity that we came to excel in these as in

our horses. The breed of cows has been entirely improved by a foreign mixture, properly adapted to supply the imperfections of our own. Such as are purely British, are far inferior in size to those on many parts of the continent; but those which we have thus improved, by far excel all others. Our Lincolnshire kind derive their size from the Holstein breed; and the large hornless cattle that are bred in some parts of England came originally from Poland. We were once famous for a wild breed of these animals, but these have long since been worn out;* and

[* In the "General View of the Agriculture of the County of Northumberland, drawn up for the consideration of the Board of Agriculture," there is an interesting account of the Wild Cattle still found in Lord Tankerville's Park at Chillingham, near Berwick-upon-Tweed. They are the only remains in this country, it is believed, of the true and genuine breed of that species.

"Their colour is invariably white, muzzle black; the whole of the inside of the ear, and about one-third of the outside, from the tip downwards, red; horns white, with black tips, very fine, and bent upwards. Some of the bulls have a thin upright mane, about an inch and a half or two inches long. The weight of the oxen is from 35 to 45 stone, and the cows from 25 to 35 stone the four quarters, 14 lb. to the stone. The beef is finely marbled, and of excellent flavour.

"From the nature of their pasture, and the frequent agitation they are put into by the curiosity of strangers, it cannot be expected they should get very fat; yet the six years' old oxen are generally very good beef; from whence it may be fairly supposed, that in proper situations they would feed well.

"At the first appearance of any person, they set off at full speed, and gallop to a considerable distance, when they make a wheel round and come boldly up again, tossing their heads in a menacing manner. On a sudden they make a full stop, at the distance of forty or fifty yards, looking wildly at the object of their surprise, but, upon the least motion being made, they again turn round, and gallop off with equal speed; but, forming a shorter circle, and returning with a bolder and more threatening aspect, they approach much nearer, when they make another stand, and again gallop off. This they do several times, shortening their distance, and advancing nearer, till they come within a few yards, when most people think it prudent to leave them.

"The mode of killing them was, perhaps, the only modern remains of the grandeur of ancient hunting. On notice being given that a wild bull would be killed upon a certain day, the inhabitants of the neighbourhood came, in great numbers, both horse and foot. The horsemen rode off the bull from the rest of the herd, until he stood at bay, when a marksman dismounted and shot. At some of these hunt-

perhaps no kingdom in Europe can furnish so few wild animals of all kinds as our own. Cultivation and agriculture are sure to banish these, wherever they are found; and every addition a country receives from art, drives away those animals that are only fitted for a state of nature.

Of all quadrupeds, the cow seems most liable to alteration from its pasture. In the different parts of our own country, we easily perceive the great varieties produced among these animals, by the richness or poverty of the soil. In some they grow to a great bulk; and I have seen an ox sixteen hands high, which is taller than the general run of our horses. In others they appear as diminutive, being not so large as an ass. The breed of the Isle of Man, and most parts of Scotland, is much less in general than in England or Ireland; they are differ-

ings, twenty or thirty shots have been fired before he was subdued. On such occasions, the bleeding victim grew desperately furious, from the smarting of his wounds, and the shoutings of savage joy that were echoing from every side. From the number of accidents that happened, this dangerous mode has been seldom practised of late years; the park-keeper alone generally shooting them with a rifled gun, at one shot.

"When the cows calve, they hide their calves, for a week or ten days, in some sequestered situation, and go and suckle them two or three times a-day. If any person come near the calves, they clap their heads close to the ground, and lie like a hare in form, to hide themselves. This is a proof of their native wildness; and is corroborated by a circumstance that happened to the writer of this narrative, (Dr. Tuller,) who found a hidden calf, two days old, very lean, and very weak. On stroking its head it got up, pawed two or three times like an old bull, bellowed very loud, retired a few steps, and bolted at his legs with all its force. It then began to paw again, bellowed, stepped back, and bolted as before; but knowing its intention, and stepping aside, it missed me, fell, and was so very weak that it could not rise, though it made several efforts: But it had done enough; the whole herd were alarmed, and coming to its rescue, obliged me to retire; for the dams will allow no person to touch their calves, without attacking them with impetuous ferocity.

"When any one happens to be wounded, or grown weak and feeble, through age and sickness, the rest of the herd set upon it, and gore it to death."]

ently shaped also, the dewlap being much smaller, and as the expression is, the beast has more of the ewe neck. This, till some years ago, was considered in cattle as a deformity; and the cow was chosen, according to Virgil's direction, with a large dewlap: however, at present it is the universal opinion that the cow wants in udder what it has in neck, and the larger the dewlap, the smaller is the quantity of its milk. Our graziers now, therefore, endeavour to mix the two breeds, the large Holstein with the small northern; and from both results that fine milch breed, which excels the cattle of any other part of the world.

This difference, arising from pasture, is more observable in other countries than in our own. The cow kind is to be found in almost every part of the world, large in proportion to the richness of the pasture, and small as the animal is stinted in its food. Thus Africa is remarkable for the largest and the smallest cattle of this kind; as is also India, Poland, Switzerland, and several other parts of Europe. Among the Eluth Tartars, where the pastures are remarkably rich and nourishing, the cow becomes so large, that he must be a tall man who can reach the tip of its shoulder. On the contrary, in France, where the animal is stinted in its food, and driven from the most flourishing pastures, it greatly degenerates.

But the differences in the size of this animal are not so remarkable as those which are found in its form, its hair, and its horns. The difference is so very extraordinary in many of them, that they have been even considered as a different kind of creature, and names have been given them as a distinct species, when in reality they are all the same.* In this manner, the urus and the bison have been consi-

* Buffon, vol. xxiii, p. 78.

dered, from the variety in their make, to be distinct in their production; but they are all in fact the descendants of one common stock, as they have that certain mark of unity, they breed and propagate among each other. Naturalists have, therefore, laboured under an obvious error, when, because of the extreme bulk of the urus, or because of the hump upon the back of the bison, they assigned them different places in the creation, and separated a class of animals which was really united. It is true, the horse and the ass do not differ so much in form as the cow and the bison; nevertheless, the former are distinct animals, as their breed is marked with sterility;—the latter are animals of the same kind, as their breed is fruitful, and a race of animals is produced, in which the hump belonging to the bison is soon worn away. The differences, therefore, between the cow, the urus, and the bison, are merely accidental. The same caprice in nature that has given horns to some cows, and denied them to others, may also have given the bison a hump, or increased the bulk of the urus; it may have given the one a mane, or denied a sufficiency of hair to the other.

But, before we proceed farther, it may be proper to describe these varieties, which have been thus taken for distinct kinds.* The urus, or wild bull, is chiefly to be met with in the province of Lithuania, and grows to a size that scarcely any other animal except the elephant, is found to equal. It is quite black, except a stripe mixed with white, that runs from the neck to the tail along the top of the back; the horns are short, thick, and strong; the eyes are fierce and fiery; the forehead is adorned with a kind of garland of black curled hair, and some of them are found to have beards of the same; the neck is short and strong, and the skin has an odour of musk.

* This description is chiefly taken from Klein.

The female, though not so big as the male, exceeds the largest of our bulls in size; nevertheless, her udder and teats are so small that they can scarcely be perceived. Upon the whole, however, this animal resembles the tame one very exactly, except in some trifling varieties, which his state of wildness, or the richness of the pastures where he is found, may easily have produced.

The bison, which is another variety of the cow kind, differs from the rest in having a lump between its shoulders. These animals are of various kinds; some very large, others as diminutively little. In general, to regard this animal's foreparts, he has somewhat the look of a lion, with a long shaggy mane, and a beard under his chin; his head is little, his eyes red and fiery, with a furious look; the forehead is large, and the horns so big, and so far asunder, that three men might often sit between them. On the middle of the back there grows a bunch almost as high as that of a camel, covered with hair, and which is considered as a great delicacy by those that hunt him. There is no pursuing him with safety, except in forests where there are trees large enough to hide the hunters. He is generally taken by pit-falls; the inhabitants of those countries where he is found wild digging holes in the ground, and covering them over with boughs of trees and grass; then provoking the bison to pursue them, they get on the opposite side of the pit-fall, while the furious animal, running head foremost, falls into the pit prepared for him, and is there quickly overcome and slain.

Besides these real distinctions in the cow kind, there have been many others made that appear to be in name only. Thus the Bonassus, of which naturalists have given us long descriptions is supposed by Klein and Buffon to be no more than another name for the bison, as the descriptions given of them

by the ancients coincide. The Bubulus also of the ancients, which some have supposed to belong to the cow kind, Buffon places among the lower class of ruminant quadrupeds, as it most resembles them in size, shape, and the figure of its horns. Of all the varieties, therefore, of the cow kind, there are but two that are really distinct; namely, the cow and the buffalo: these two are separated by nature; they seem to bear an antipathy to each other; they avoid each other, and may be considered as much removed as the horse is from the ass or the zebra. When, therefore, we have described the varieties of the cow kind, we shall pass on to the buffalo, which being a different animal, requires a separate history.

There is scarcely a part of the world, as was said before, in which the cow is not found in some one of its varieties; either large, like the urus, or humped as the bison; with straight horns, or bending, inverted backwards, or turning sideways to the cheek, like those of the ram; and in many countries they are found without any horns whatsoever. But to be more particular, beginning at the north, the few kine which subsist in Iceland are without horns, although of the same race originally with ours. The size of these is rather relative to the goodness of the pasture, than the warmth or coldness of the climate. The Dutch frequently bring great quantities of lean cattle from Denmark, which they fatten on their own rich grounds. These are in general of a larger size than our own natural breed, and they fatten very easily. The cattle of the Ukraine, where the pasture is excellent, become very fat, and are considered as one of the largest breeds of Europe. In Switzerland, where the mountains are covered with a rich nourishing herbage, which is entirely reserved for their kine, these animals grow to a very large size. On the contrary, in France, where they get no

other grass but what is thought unfit for horses, they dwindle, and grow lean. In some parts of Spain the cow grows to a good size: the wild bull, however, which they pride themselves so much in combating, is a very mean despicable little animal, and somewhat shaped like one of our cows, with nothing of that peculiar sternness of aspect for which our bulls are remarkable. In Barbary, and the provinces of Africa, where the ground is dry, and the pasturage short, the cows are of a very small breed, and give milk in proportion. On the contrary, in Ethiopia they are of a prodigious bigness. The same holds in Persia and Tartary, where in some places they are very small, and in others of an amazing stature. It is thus, in almost every part of the world, this animal is found to correspond in size to the quantity of its provision.

If we examine the form of these animals as they are found tame in different regions, we shall find that the breed of the urus, or those without a hump, chiefly occupies the cold and the temperate zones, and is not so much dispersed towards the south. On the contrary, the breed of the bison, or the animal with a hump, is found in all the southern parts of the world;* throughout the vast continent of India;

[* Captain Turner, in his account of an embassy to Thibet, informs us, that the Yak of Tartary is about the height of an English bull, which in the general figure of the body, head, and legs he resembles, except in having a protuberance over the shoulders. The upper part of his body is clothed with a thick soft wool, but the inferior parts with hair, so long as sometimes to trail on the ground, which is manufactured into tents and ropes. The tail is also composed of a prodigious quantity of long glossy hair, so that not a joint of it is perceptible, but it has much the appearance of being artificially set on. The tails are used throughout the East, under the denomination of *Chowries*, for driving away flies and mosquetoes, and they are also employed as ornamental furniture upon horses and elephants.

These cattle have a downcast heavy look; and indeed they are sullen and suspicious, discovering much impatience at the near approach of strangers. They do not low loud, but make a grunting noise scarcely audible, and that only when under some impression of uneasiness.

throughout Africa, from Mount Atlas to the Cape of Good Hope. In all these countries the bison seems chiefly to prevail, where they are found to have a smooth soft hair, are very nimble of foot, and in some measure supply the want of horses. The bison breed is also more expert and docile than ours; many of them, when they carry burdens, bend their knees to take them up or set them down: they are treated, therefore, by the natives of those countries, with a degree of tenderness and care equal to their utility, and the respect for them in India has degenerated even into blind adoration. But it is among the Hottentots where these animals are chiefly esteemed, as being more than commonly serviceable. They are their fellow-domestics, the companions of their pleasures and fatigues; the cow is at once the Hottentot's protector and servant, assists him in attending his flocks, and guarding them against every invader: while the sheep are grazing, the faithful Backely, as this kind of cow is called, stands or grazes beside them; still, however, attentive to the looks of its master, the backely flies round the field, herds in the sheep that are straying, obliges them to keep within proper limits, and shows no mercy to robbers, or even strangers, who attempt to plunder. But it is not the plunderers of the flock alone, but even the enemies of the nation, that these backelies are taught to combat. Every army of Hottentots is furnished with a proper herd of these, which are let loose against the enemy when the occasion is most convenient. Being thus sent forward, they overturn all before them; they

The chain of mountains which divides Thibet from Bootan is their favourite haunt. In this vicinity the southern glens afford them food and shelter during the severity of winter; and in milder seasons the northern aspect is more congenial to their nature, and admits a wider range. Thefe male gives an abundant supply of rich milk, and the butter produced from it is excellent. The yak varies in colour, as well as in the lengtha ndf orm of the horns; those with white tails are most esteemed, and the horns are sometimes as white as ivory.]

strike every opposer down with their horns, and trample upon them with their feet; and thus often procure their masters an easy victory even before they have attempted to strike a blow. An animal so serviceable, it may be supposed, is not without its reward. The backely lives in the same cottage with its master, and by long habit gains an affection for him; and in proportion as the man approaches to the brute, so the brute seems to attain even to some share of human sagacity. The Hottentot and his backely thus mutually assist each other; and when the latter happens to die, a new one is chosen to succeed him by a council of the old men of the village. The new backely is then joined with one of the veterans of its own kind, from whom it learns its art, becomes social and diligent, and is taken for life into human friendship and protection.

The bisons, or cows with a hump, are found to differ very much from each other, in the several parts of the world where they are found. The wild ones of this kind, as with us are much larger than the tame. Some have horns, and some are without any; some have them depressed, and some raised in such a manner that they are used as weapons of annoyance or defence; some are extremely large; and others among them, such as the Zebu, or Barbary cow, are very small. They are all, however, equally docile and gentle when tamed; and in general, furnished with a fine lustrous soft hair, more beautiful than that of our own breed: their hump is also of different sizes, in some weighing from forty to fifty pounds, in others less; it is not, however, to be considered as a part necessarily belonging to the animal, and probably it might be cut away without much injury: it resembles a gristly fat, and, as I am assured, cuts and tastes somewhat like a dressed udder. The bisons of Malabar, Abyssinia, and Madagascar, are

of the great kind, as the pastures there are plentiful. Those of Arabia Petræa, and most parts of Africa, are small, and of the zebu or little kind. In America, especially towards the north, the bison is well known. The American bison, however, is found to be rather less than that of the ancient continent; its hair is longer and thicker, its beard more remarkable, and its hide more lustrous and soft. There are many of them brought up tame in Carolina; however, their wild dispositions still seem to continue, for they break through all fences to get into the cornfields, and lead the whole tame herd after them, wherever they penetrate. They breed also with the tame kinds originally brought over from Europe, and thus produce a race peculiar to that country.

From all this it appears,* that naturalists have given various names to animals in reality the same, and only differing in some few accidental circumstances. The wild cow and the tame, the animal belonging to Europe, and that of Asia, Africa, and America, the bonassus and the urus, the bison and the zebu, are all one and the same, propagate among each other, and, in the course of a few generations, the hump wears away, and scarcely any vestiges of savage fierceness are found to remain. Of all animals, therefore, except man alone, the cow seems most extensively propagated. Its nature seems equally capable of the rigours of heat and cold. It is an inhabitant as well of the frozen fields of Iceland, as the burning deserts of Libya. It seems an ancient inmate in every climate, domestic and tame in those countries which have been civilized, savage and wild in the countries which are less peopled, but capable of being made useful in all: able to defend itself in a state of nature against the most powerful enemy of the forest; and only subordinate to man,

* Buffon, vol. xxiii, p. 130.

whose force it has experienced, and whose aid it at last seems to require. However wild the calves are which are taken from the dam in a savage state, either in Africa or Asia, they soon become humble, patient and familiar; and man may be considered, in those countries, as almost helpless without their assistance. Other animals preserve their nature or their form with inflexible perseverance; but these, in every respect, suit themselves to the appetites and convenences of mankind; and as their shapes are found to alter, so also does their nature: in no animal is there seen a greater variety of kinds, and in none a more humble and pliant disposition.

THE BUFFALO.

If we should compare the shape of our common cow with that of the bison, the difference will appear very great. The shaggy mane of the latter, the beard, the curled forehead, the inverted horns, the broad breast, and the narrow hinder parts, give it the appearance rather of a lion than a cow, and fit it more for a state of war with mankind than a state of servitude. Yet notwithstanding these appearances, both animals are found to be the same, or at least so nearly allied that they breed among each other, and propagate a race that continues the kind.*

On the other hand, if we compare the buffalo with our common cow, no two animals can be more nearly alike, either in their form or their nature: both equally submissive to the yoke, both often living under the same roof, and employed in the same domestic services; the make and the turn of their bodies so much alike that it requires a close attention to distinguish them; and yet, after all this, no two

animals can be more distinct, or seem to have stronger antipathies to each other.* Were there but one of each kind remaining, it is probable the race of both would shortly be extinct. However, such is the fixed aversion formed between these creatures, that the cow refuses to breed with the buffalo, which it nearly resembles; while it is known to propagate with the bison, to which it has in point of form, but a very distant similitude.

The buffalo is, upon the whole, by no means so beautiful a creature as the cow; his figure is more clumsy and awkward, his air is wilder, and he carries his head lower and nearer the ground; his limbs are less fleshy, and his tail more naked of hair; his body is shorter and thicker than that of the cow kind, his legs are higher, his head smaller, his horns not so round, black and compressed, with a bunch of curled hair hanging down between them; his skin is also harder and thicker, more black and less furnished with hair; his flesh which is hard and blackish, is not only disagreeable to the taste, but likewise to the smell. The milk of the female is by no means so good as that of the cow; it is however produced in great abundance. In the warm countries, almost all their cheese is made of the milk of the buffalo; and they supply butter also in large quantities. The veal of the young buffalo is not better eating than the beef of the old. The hide of this animal seems to be the most valuable thing he furnishes. The leather made of it is well known for its thickness, softness, and impenetrability. As these animals are in general larger and stronger than the cow, they are usefully employed in agriculture. They are used in drawing burdens, and sometimes in carrying them, being guided by a ring, which is thrust through their nose. Two buffaloes yoked in

*Buffon.

a wagon are said to draw more than four strong horses: as their heads and necks are naturally bent downward, they are thus better fitted for the draught, and the whole weight of their bodies is applied to the carriage that is to be drawn forward.

From the size and bulk of the buffalo, we may be easily led to conclude that he is a native of the warmer climates. The largest quadrupeds are generally found in the torrid zone; and the buffalo is inferior, in point of size, only to the elephant, the rhinoceros, or the hippopotamus. The camelopard, or the camel, may indeed be taller, but they are neither so long, nor near so corpulent. Accordingly, we find this animal wild in many parts of India; and tamed also wherever the natives have occasion for his services. The wild buffaloes are very dangerous animals, and are often found to gore travellers to death, and then trample them with their feet, until they have entirely mangled the whole body: however, in the woods they are not so much to be feared as in the plains, because in the violence of their pursuit their large horns are apt to be entangled in the branches of the trees, which gives those who have been surprised by them time to escape the danger. There is scarcely any other method of avoiding their pursuit: they run with great swiftness; they overturn a tree of moderate growth; and are such swimmers, as to cross the largest rivers without any difficulty. In this manner, like all other large animals of the torrid zone, they are very fond of the water, and, in the midst of their pursuit, often plunge in in order to cool themselves. The Negroes of Guinea, and the Indians of Malabar, where buffaloes are in great abundance, take great delight in hunting and destroying them: however, they never attempt to face the buffalo openly, but generally climbing up the tree, shoot at him from thence, and do not come

down till they find they have effectually despatched him. When they are tamed, no animal can be more patient or humble; and though by no means so docile as the cow kind, yet they go through domestic drudgeries, with more strength and perseverance.

Although these animals be chiefly found in the torrid zone, yet they are bred in several parts of Europe, particularly in Italy, where they make the food and the riches of the poor. The female produces but one at a time, in the same manner as the cow, but they are very different in the times of gestation; for the cow, as we know, goes but nine months, whereas the buffalo continues pregnant for twelve. They are all afraid of fire, and, perhaps in consequence of this, have an aversion to red colours, that resemble the colour of flame: it is said, that in those countries where they are found in plenty, no person dares to dress in scarlet. In general they are inoffensive animals, if undisturbed, as indeed all those which feed upon grass are found to be; but when they are wounded, or when even but fired at, nothing then can stop their fury; they then turn up the ground with their fore-feet, bellow much louder and more terribly than the bull, and make at the object of their resentment with ungovernable rage. It is happy, in such circumstances, if the person they pursue has a wall to escape over, or some such obstacle, otherwise they soon overtake, and instantly destroy him. It is remarkable, however, that although the horns are so very formidable, they in general make more use of their feet in combat, and rather tread their enemies to death than gore them.

Having thus gone through the history of these animals, it may be proper to observe, that no names have been more indiscriminately used than those of the bull, the urus, the bison, and the buffalo. It therefore becomes such as would have distinct ideas

of each, to be careful in separating the kinds, the one from the other, allowing the cow for the standard of all. The urus, whether of the large enormous kind of Lithuania, or the smaller race of Spain, whether with long or short horns, whether with or without long hair in the forehead, is every way the same with what our common breed was before they were taken from the forest, and reduced to a state of servitude. The bison, and all its varieties, which are known by a hump between the shoulders, is also to be placed in the same class. This animal whether with crooked or straight horns, whether they be turned towards the cheek, or totally wanting, whether it be large or diminutive, whatever be its colour, or whatever the length of its hair, whether called the *bonassus* by some, or the *bubalus* by others, is but a variety of the cow kind, with whom it breeds, and with whom, of consequence, it has the closest connexion. Lastly, the buffalo, though shaped much more like the cow, is a distinct kind by itself, that never mixes with any of the former; that goes twelve months with young, whereas the cow goes but nine; that testifies an aversion to the latter; and, though bred under the same roof, or feeding in the same pasture, has always kept separate, and makes a distinct race in all parts of the world. These two kinds are supposed to be the only real varieties in the cow kind, of which naturalists have given so many varieties. With respect to some circumstances mentioned by travellers, such as that of many kinds defending themselves by voiding their dung against their pursuers, this is a practice which they have in common with other timid creatures when pursued, and arises rather from fear than a desire of defence. The musky smell, also, by which some have been distinguished, is found common to many of these kinds in a state of nature,

and does not properly make the characteristic marks of any.* The particular kind of noise also which some of them are known to make, which rather resembles grunting than bellowing or lowing, is but a savage variety, which many wild animals have, and yet lose when brought into a state of tameness. For these reasons, M. Buffon, whom I have followed in this description, is of opinion, that the zebu, or little African cow, and the grunting, or Siberian cow, are but different races of the bison, as the shape of the horns, or the length of the hair, are never properly characteristic marks of any animal, but are found to vary with climate, food, and cultivation.

In this manner the number of animals of the cow kind, which naturalists have extended to eight or ten sorts, are reduced to two; and as the utmost deference is paid to the opinion of M. Buffon in this particular, I have taken him for my guide. Nevertheless, there is an animal of the cow kind, which

[* The Musk Ox is but of small size, being rather lower than the deer, but larger or thicker in body, with short legs and a very short tail. The hair in the male is of a dusky red colour, extremely fine, and so long as to trail on the ground, and render the animal a seemingly shapeless mass, without distinction of head or tail. Beneath the hair, on all parts of the animal, is a very fine wool, which when manufactured into stockings is said to be more beautiful than silk. The horns are large, and very remarkable: they are united at their origin in the skull; but immediately after, they fall down on each side of the crown of the head, then taper away small, the points turning up. The cow, or female, differs from the male, in having the horns much smaller, and placed at the distance of nine inches from each other at the base. These animals frequent the country about 100 miles inwards to the north-west of Churchill river, in Hudson's Bay, where they are very numerous. They delight most in rocky and barren mountains, and are seldom found at any great distance through the woods. Though a beast of considerable magnitude and apparently unwieldy form, yet it climbs the rocks with great ease and agility, and is nearly as sure-footed as a goat. The calves and young heifers are very good eating; but the flesh of the bulls both smells and tastes so strongly of musk, as to render it very disagreeable. "Of the tail of this animal," says Mr. Pennant, "the Esquimaux of Hudson's Bay make a cap of the most horrible appearance; for the hairs fall all round their heads, and cover their faces: yet it is of singular service in keeping off the musquetoes, which would otherwise be intolerable."]

neither he, nor any other naturalist that I know of, has hitherto described, yet which makes a very distinct class, and may be added as a third species.

This animal was shown some years ago in London, and seemed to unite many of the characteristics of the cow and the hog; having the head, the horns, and the tail of the former, with the bristles, the colour, and the grunting of the latter. It was about the size of an ass, but broader and thicker; the colour resembling that of a hog, and the hair bristly, as in that animal. The hair upon the body was thin, as in the hog; and a row of bristles ran along the spine, rather shorter and softer than in the hog kind. The head was rather larger than that of a cow; the teeth were entirely resembling those of that animal, and the tongue was rough in like manner. It fed upon hay; and, consequenly, its internal conformation must have resembled that of the cow kind more than the hog, whose food is always chosen of a kind more succulent. The eyes were placed in the head as with the cow, and were pretty nearly of the same colour; the horns were black and flattish, but bent rather backwards to the neck, as in the goat kind; the neck was short and thick, and the back rather rising in the middle; it was cloven-footed like the cow, without those hinder claws that are found in the hog kinds. But the greatest variety of all in this extraordinary creature, which was a female, was, that it had but two teats, and consequently, in that respect, resembled neither of the kinds to which, in other circumstances, it bore so strong a similitude. Whether this animal was a distinct kind, or a monster, I will not pretend to say. It was shown under the name of the Bonassus, and it was said, by the person who showed it, to have come from India: but no credit is to be given to interested ignorance; the person only wanted to make the animal appear as

extraordinary as possible; and I believe would scarcely scruple a lie or two, to increase that wonder in us by which he found the means of living.

CHAPTER XI.

OF ANIMALS OF THE SHEEP AND GOAT KIND.

As no two animals are found entirely the same, so it is not to be expected that any two races of animals should exactly correspond in every particular. The goat and the sheep are apparently different in the form of their bodies, in their covering, and in their horns. They may from hence be considered as two different kinds with regard to all common and domestic purposes. But if we come to examine them closer, and observe their internal conformation, no two animals can be more alike; their feet, their four stomachs, their suet, their appetites, all are entirely the same, and show the similitude between them; but what makes a much stronger connexion is, that they propagate with each other. The buck goat is found to produce with the ewe, an animal that in two or three generations returns to the sheep, and seems to retain no mark of its ancient progenitor.* The sheep and the goat, therefore, may be considered as belonging to one family; and were the whole races reduced to one of each, they would quickly replenish the earth with their kind.

If we examine the sheep and goat internally, we shall find, as was said, that their conformation is entirely the same; nor is their structure very remote from that of the cow kind, which they resemble in their hoofs, and in their chewing the cud. Indeed

* Buffon, *passim*.

all ruminant animals are internally very much alike. The goat, the sheep, or the deer, exhibit to the eye of the anatomist the same parts in miniature which the cow or the bison exhibited in the great: but the differences between these animals are nevertheless sufficiently apparent. Nature has obviously marked the distinctions between the cow and the sheep kind by their form and size; and they are also distinguished from those of the deer kind by never shedding their horns. Indeed the form and figure of these animals, if there were nothing else, would seldom fail of guiding us to the kind; and we might almost upon sight tell which belong to the deer kind, and which are to be degraded into that of the goat. However, the annually shedding the horns in the deer, and the permanence in the sheep, draws a pretty exact line between the kinds; so that we may hold to this distinction only, and define the sheep and goat kind as ruminant animals of a smaller size, that never shed their horns.*

If we consider these harmless and useful animals in one point of view, we shall find that both have been long reclaimed, and brought into a state of domestic servitude. Both seem to require protection from man, and are in some measure pleased with his society. The sheep, indeed, is the more serviceable creature of the two; but the goat has more sensibility and attachment. The attending upon both was once the employment of the wisest and the best of men; and those have been ever supposed the happiest times in which these harmless creatures were considered as the chief objects of human attention. In the earliest ages the goat seemed rather the greater favourite,

[* The horns of the sheep are concave, turned backwards, and full of wrinkles; those of the goat are hollow, but turned upwards, erect, and scabrous. Both animals have eight fore-teeth in the under jaw, but none in the upper; and they have no dog-teeth. The male goat has a long beard.]

and indeed it continues such in some countries to this day among the poor. However, the sheep has long since become the principal object of human care; while the goat is disregarded by the generality of mankind, or become the possession only of the lowest of the people. The sheep, therefore, and its varieties, may be considered first, and the goat, with all those of its kind, will then properly follow.

THE SHEEP.

Those animals that take refuge under the protection of man, in a few generations become indolent and helpless. Having lost the habit of self-defence, they seem to lose also the instincts of nature. The sheep, in its present domestic state, is of all animals the most defenceless and inoffensive. With its liberty it seems to have been deprived of its swiftness and cunning; and what in the ass might rather be called patience, in the sheep appears to be stupidity. With no one quality to fit it for self-preservation, it makes vain efforts at all. Without swiftness, it endeavours to fly; and without strength, sometimes offers to oppose. But these feeble attempts rather incite than repress the insults of every enemy; and the dog follows the flock with greater delight upon seeing them fly, and attacks them with more fierceness upon their unsupported attempts at resistance. Indeed they run together in flocks rather with the hopes of losing their single danger in the crowd, than of uniting to repress the attack by numbers. The sheep, therefore, were it exposed in its present state to struggle with its natural enemies of the forest, would soon be extirpated. Loaded with a heavy fleece, deprived of the defence of its horns, and ren-

dered heavy, slow, and feeble, it can have no other safety than what it finds from man. This animal is now, therefore, obliged to rely solely upon that art for protection, to which it originally owes its degradation.

But we are not to impute to nature the formation of an animal so utterly unprovided against its enemies, and so unfit for defence. The Moufflon, which is the sheep in a savage state; is a bold fleet creature, able to escape from the greater animals by its swiftness, or to oppose the smaller kinds with the arms it has received from nature. It is by human art alone that the sheep has become the tardy defenceless creature we find it. Every race of quadrupeds might easily be corrupted by the same allurements by which the sheep has been thus debilitated and depressed. While undisturbed, and properly supplied, none are found to set any bounds to their appetite. They all pursue their food while able, and continue to graze till they often die of disorders occasioned by too much fatness. But it is very different with them in a state of nature: they are in the forest surrounded by dangers, and alarmed with unceasing hostilities; they are pursued every hour from one tract of country to another, and spend a great part of their time in attempts to avoid their enemies. Thus constantly exercised, and continually practising all the arts of defence and escape, the animal at once preserves its life and native independence, together with its swiftness, and the slender agility of its form.

The sheep in its servile state seems to be devested of all inclinations of its own, and of all animals it appears the most stupid. Every quadruped has a peculiar turn of countenance, a physiognomy, if we may so call it, that generally marks its nature. The sheep seems to have none of those traits that beto-

ken either courage or cunning; its large eyes, separated from each other, its ears sticking out on each side, and its narrow nostrils, all testify the extreme simplicity of this creature; and the position of its horns also shows that nature designed the sheep rather for flight than combat. It appears a large mass of flesh, supported upon four small straight legs, ill fitted for carrying such a burden; its motions are awkward, it is easily fatigued, and often sinks under the weight of its own corpulency. In proportion as these marks of human transformation are more numerous, the animal becomes more helpless and stupid. Those which live upon a more fertile pasture, and grow fat, become entirely feeble; those that want horns are found more dull and heavy than the rest;* those whose fleeces are longest and finest are more subject to a variety of disorders; and, in short, whatever changes have been wrought in this animal by the industry of man, are entirely calculated for human advantage, and not for that of the creature itself. It might require a succession of ages before the sheep could be restored to its primitive state of activity, so as to become a match for its pursuers of the forest.

The goat, which it resembles in so many other respects, is much its superior. The one has its particular attachments, sees danger, and generally contrives to escape it; but the other is timid without a cause, and secure when real danger approaches. Nor is the sheep, when bred up tame in the house, and familiarized with its keepers, less obstinately absurd: from being dull and timid, it then acquires a degree of pert familiarity, butts with its head, becomes mischievous, and shows itself every way unworthy of being singled out from the rest of the flock. Thus it seems rather formed for slavery than

* Daubenton upon the Sheep.

friendship, and framed more for the necessities than the amusements of mankind. There is but one instance in which the sheep shows any attachment to its keeper, and that is seen rather on the continent than among us in Great Britain. What I allude to is, their following the sound of the shepherd's pipe. Before I had seen them trained in this manner, I had no conception of those descriptions in the old pastoral poets, of the shepherd leading his flock from one country to another. As I had been used only to see these harmless creatures driven before their keepers, I supposed that all the rest was but invention; but in many parts of the Alps, and even some provinces of France, the shepherd and his pipe are still continued with true antique simplicity. The flock is regularly penned every evening, to preserve them from the wolf; and the shepherd returns homeward at sun-set, with his sheep following him, and seemingly pleased with the sound of the pipe, which is blown with a reed, and resembles the chanter of the bagpipe. In this manner, in those countries that still continue poor, the Arcadian life is preserved in all its former purity; but in countries where a greater inequality of conditions prevail, the shepherd is generally some poor wretch who attends a flock from which he is to derive no benefits, and only guards those luxuries which he is not fated to share.

It does not appear, from early writers, that the sheep was bred in Britain; and it was not till several ages after this animal was cultivated, that the woollen manufacture was carried on among us.* That valuable branch of business lay for a considerable time in foreign hands, and we were obliged to import the cloth manufactured from our own materials. There were, notwithstanding, many unavailing efforts among our kings to introduce and pre-

* British Zoology, vol. i, p. 23.

serve the manufactory at home. Henry the Second, by a patent granted to the weavers in London, directed, that if any cloth was found made of a mixture of Spanish wool, it should be burned by the mayor. Such edicts, at length, although but slowly, operated towards the establishing this trade among us. The Flemings, who, at the revival of arts, possessed the art of cloth-working in a superior degree, were invited to settle here; and, soon after, foreign cloth was prohibited from being worn in England. In the times of Queen Elizabeth this manufacture received every encouragement; and many of the inhabitants of the Netherlands being then forced, by the tyranny of Spain, to take refuge in this country, they improved us in those arts in which we at present excel the rest of the world. Every art, however, has its rise, its meridian, and its decline; and it is supposed by many, that the woollen manufacture has for some time been decaying amongst us. The cloth now made is thought to be much worse than that of some years past; being neither so firm nor so fine, neither so much courted abroad nor so serviceable at home.

No country, however, produces such sheep as England, either with larger fleeces, or better adapted for the business of clothing. Those of Spain, indeed, are finer, and we generally require some of their wool to work up with our own; but the weight of a Spanish fleece is no way comparable to one of Lincoln or Warwickshire; and in those counties it is no uncommon thing to give a hundred guineas for a ram.

The sheep without horns are counted the best sort, because a great part of the animal's nourishment is supposed to go up into the horns.* Sheep, like other ruminant animals, want the upper fore-

* Lisle's Husbandry, vol. ii, p. 155.

teeth, but have eight in the lower jaw; two of these drop, and are replaced at two years old, four of them are replaced at three years old, and all at four. The new teeth are easily known from the rest, by their freshness and whiteness. There are some breeds, however, in England, that never change their teeth at all: these the shepherds call the *leather-mouthed cattle;* and, as their teeth are thus longer wearing, they are generally supposed to grow old a year or two before the rest.* The sheep brings forth one or two at a time, and sometimes three or four. The first lamb of an ewe is generally pot-bellied, short and thick, and of less value than those of a second or third production, the third being supposed the best of all. They bear their young five months; and, by being housed, they bring forth at any time of the year.

But this animal, in its domestic state, is too well known to require a detail of its peculiar habits, or of the arts which have been used to improve the breed. Indeed, in the eye of an observer of nature, every art which tends to render the creature more helpless and useless to itself, may be considered rather as an injury than an improvement; and if we are to look for this animal in its noblest state, we must seek for it in the African desert or the extensive plains of Siberia. Among the degenerate descendants of the wild sheep there have been so many changes wrought, as entirely to disguise the kind, and often to mislead the observer. The variety is so great, that scarcely any two countries have their sheep of the same kind; but there is found a manifest difference in all, either in the size, the covering, the shape, or the horns.

The woolly sheep,† as it is seen among us, is found only in Europe, and some of the temperate provinces of Asia. When transported into warmer countries,

* Lisle's Husbandry, vol. ii, p. 155. † Buffon, vol. xxiii, p. 168.

either into Florida or Guinea, it loses its wool, and assumes a covering fitted to the climate, becoming hairy and rough; it there also loses its fertility, and its flesh no longer has the same flavour. In the same manner, in the very cold countries it seems equally helpless and a stranger; it still requires the unceasing attention of mankind for its preservation; and although it is found to subsist as well in Greenland as in Guinea,* yet it seems a natural inhabitant of neither.

Of the domestic kinds to be found in the different parts of the world, besides our own, which is common in Europe, the first variety is to be seen in Iceland, Muscovy, and the coldest climates of the north. This, which may be called the Iceland sheep, resembles our breed in the form of the body and the tail, but differs in a very extraordinary manner in the number of the horns, being generally found to have four, and sometimes even eight, growing from different parts of the forehead. These are large and formidable, and the animal seems thus fitted by nature for a state of war; however, it is of the nature of the rest of its kind, being mild, gentle, and timid. Its wool is very different also from that of the common sheep, being long, smooth, and hairy. Its colour is of a dark brown, and under its outward coat of hair it has an internal covering, that rather resembles fur than wool, being fine, short, and soft.

The second variety to be found in this animal is that of the broad-tailed sheep, so common in Tartary, Arabia, Persia, Barbary, Syria, and Egypt. This sheep is only remarkable for its large and heavy tail, which is often found to weigh from twenty to thirty pounds. It sometimes grows a foot broad, and is obliged to be supported by a small kind of board that goes upon wheels. This tail is not covered under-

* Crantz.

neath with wool, like the upper part, but is bare; and the natives who consider it as a very great delicacy, are very careful in attending and preserving it from injury. M. Buffon supposes that the fat which falls into the caul in our sheep, goes in these to furnish the tail, and that the rest of the body is from thence deprived of fat in proportion. With regard to their fleeces in the temperate climates, they are, as in our own breed, soft and woolly, but in the warmer latitudes they are hairy; yet in both they preserve the enormous size of their tails.

The third observable variety is that of the sheep called *Strepsicheros*. This animal is a native of the islands of the Archipelago, and only differs from our sheep in having straight horns, surrounded with a spiral furrow.

The last variety is that of the Guinea sheep, which is generally found in all the tropical climates, both of Africa and the East Indies. They are of a large size, with a rough hairy skin, short horns, and ears hanging down, with a kind of dewlap under the chin. They differ greatly in form from the rest, and might be considered as animals of another kind, were they not known to breed with other sheep. These, of all the domestic kinds, seem to approach the nearest to the state of nature. They are larger, stronger, and swifter than the common race, and consequently better fitted for the precarious forest life. However, they seem to rely, like the rest, on man for support, being entirely of a domestic nature, and subsisting only in the warmer climates.

Such are the varieties of this animal which have been reduced into a state of domestic servitude. These are all capable of producing among each other; all the peculiarities of their form have been made by climate and human cultivation, and none of them seem sufficiently independent to live in a

state of savage nature. They are, therefore, to be considered as a degenerate race, formed by the hand of man, and propagated merely for his benefit. At the same time, while man thus cultivates the domestic kinds, he drives away and destroys the savage race, which are less beneficial and more headstrong. These, therefore, are to be found in but a very small number in the most uncultivated countries, where they have been able to subsist by their native swiftness and strength. It is in the more uncultivated parts of Greece, Sardinia, Corsica, and particularly in the deserts of Tartary, that the Moufflon is to be found that bears all the marks of being the primitive race, and that has been actually known to breed with the domestic animal.

The Moufflon, or Musmon, though covered with hair, bears a stronger similitude to the ram than to any other animal: like the ram, it has the eyes placed near the horns, and its ears are shorter than those of the goat; it also resembles the ram in its horns, and in all the particular contours of its form. The horns are alike; they are of a yellow colour; they have three sides, as in the ram, and bent backwards in the same manner behind the ears. The muzzle, and the inside of the ears, are of a whitish colour, tinctured with yellow; the other parts of the face are of a brownish gray. The general colour of the hair over the body is of a brown, approaching to that of the red deer. The inside of the thighs and belly are of a white tinctured with yellow. The form, upon the whole, seems more made for agility and strength than that of the common sheep; and the moufflon is actually found to live in a savage state, and maintain itself, either by force or swiftness, against all the animals that live by rapine. Such is its extreme speed, that many have been inclined rather to rank it among the deer kind than

the sheep. But in this they are deceived, as the musmon has a mark that entirely distinguishes it from that species, being known never to shed its horns. In some these are seen to grow to a surprising size, many of them measuring in their convolutions, above two ells long. They are of a yellow colour, as was said, but the older the animal grows, the darker the horns become; with these they often maintain very furious battles between each other, and sometimes they are found broken off in such a manner, that the small animals of the forest creep into the cavity for shelter.* When the musmon is seen standing on the plain, his fore-legs are always straight, while his hinder legs seem bent under him; but in cases of more active necessity this seeming deformity is removed, and he moves with great swiftness and agility. The female very much resembles the male of this species, but that she is less, and her horns also are never seen to grow to that prodigious size they are of in the wild ram. Such is the sheep in its savage state, a bold, noble, and even beautiful animal; but it is not the most beautiful creatures that are always found most useful to man. Human industry has therefore destroyed its grace to improve its utility.

THE GOAT, AND ITS NUMEROUS VARIETIES.

THERE are some domestic animals that seem as auxiliaries to the more useful sorts, and that, by ceasing to be the first, are considered as nothing. We have seen the services of the ass slighted because inferior to those of the horse, and in the same manner, those of the goat are held cheap, because the

* Gmelin, as quoted by Buffon.

1. Domestic Goat — 2. Goat of Angora — 3. Syrian Goat.

sheep so far exceeds it. Were the horse or the sheep removed from nature, the inferior kinds would then be invaluable; and the same arts would probably be bestowed in perfecting their kinds, that the higher order of animals have experienced. But in their present neglected state, they vary but little from the wild animals of the same kind: man has left them their primitive habits and forms, and the less they owe to his assiduity, the more they receive from nature.

The goat seems, in every respect, more fitted for a life of savage liberty than the sheep.* It is naturally more lively, and more possessed with animal instinct. It easily attaches itself to man, and seems sensible of his caresses. It is also stronger and swifter, and more courageous, and more playful, lively, capricious, and vagrant; it is not easily confined to its flock, but chooses its own pastures, and loves to stray remote from the rest. It chiefly delights in climbing precipices, in going to the very edge of danger; it is often seen suspended upon an eminence hanging over the sea upon a very little base, and even sleeps there in security. Nature has, in some measure, fitted it for traversing these declivities with ease; the hoof is hollow underneath, with sharp edges, so that it walks as securely on the ridge of a house as on the level ground. It is a hardy animal, and very easily sustained; for which reason it is chiefly the property of the poor, who have no pastures with which to supply it. Happily, however, it seems better pleased with the neglected wild than the cultivated fields of art; it chooses the heathy mountain or the shrubby rock; its favourite food is the tops of the boughs, or the tender bark of young trees; it seems less afraid of immoderate heat, and bears the warm climates better than the sheep;

* Buffon.

it sleeps exposed to the sun, and seems to enjoy its warmest fervours; neither is it terrified at the storm, or incommoded by the rain; immoderate cold alone seems to affect it, and is said to produce a vertigo, with which this animal is sometimes incommoded. The inconstancy of its nature is perceivable in the irregularity of its gait; it goes forward, stops, runs, approaches, flies, merely from caprice, and with no other seeming reason than the extreme vivacity of its disposition.

There are proofs of this animal's being naturally the friend of man, and that the goat seldom resumes its primeval wildness when once reduced into a state of servitude. In the year 1698, an English vessel happening to touch at the islands of Bonavista, two Negroes came, and offered the sailors as many goats as they chose to take away. Upon the captain's expressing his astonishment at this offer, the Negroes assured him that there were but twelve persons in the island, and that the goats were multiplied in such a manner as even to become a nuisance: they added, that instead of giving any trouble to catch them, they followed the few inhabitants that were left with a sort of obstinacy, and rather became importunate with their tameness.

The goat produces but two at a time, and three at the most. But in the warmer climates, although the animal degenerates, and grows less, yet it becomes more fruitful, being generally found to bring forth three, four, and five at a single delivery. The buck is capable of propagating at the age of one year, and the female at seven months: however, the fruits of this premature generation are weak and defective; and their best breeding time is generally delayed till the age of two years; or eighteen months at least. One buck is sufficient for a hundred and fifty goats: his appetites are excessive; but this ardour brings on

a speedy decay, so that he is enervated in four years at most, and even becomes old before he reaches his seventh year. The goat, like the sheep, continues five months with young, and in some places bears twice a-year.

The milk of the goat is sweet, nourishing, and medicinal; not so apt to curdle upon the stomach as that of the cow, and therefore preferable to those whose digestion is but weak. The peculiarity of this animal's food gives the milk a flavour different from that either of the cow or the sheep; for as it generally feeds upon shrubby pastures and heathy mountains, there is an agreeable wildness in the taste, very pleasing to such as are fond of that aliment. In several parts of Ireland, and the Highlands of Scotland, the goat makes the chief possession of the inhabitants. On those mountains where no other useful animal could find subsistence, the goat continues to glean a sufficient living, and supplies the hardy natives with what they consider as varied luxury. They lie upon beds made of their skins, which are soft, clean, and wholesome; they live upon their milk, with oat bread; they convert a part of it into butter, and some into cheese; the flesh, indeed, they seldom taste of, as it is a delicacy which they find too expensive; however, the kid is considered, even by the city epicure, as a great rarity; and the flesh of the goat, when properly prepared, is ranked by some as no way inferior to venison. In this manner, even in the wildest solitudes, the poor finds comforts of which the rich do not think it worth their while to dispossess them: in these mountainous retreats, where the landscape presents only a scene of rocks, heaths, and shrubs, that speak the wretchedness of the soil, these simple people have their feasts, and their pleasures; their faithful flock of goats attend them to these awful solitudes, and furnishes them with all the neces-

saries of life; while their remote situation happily keeps them ignorant of greater luxury.

As these animals are apt to stray from the flock no man can attend above fifty of them at a time. They are fattened in the same manner as sheep; but, taking every precaution, their flesh is never so good, or so sweet, in our climate, as that of mutton. It is otherwise between the tropics. The mutton there becomes flabby and lean, while the flesh of the goat rather seems to improve; and in some places the latter is cultivated in preference to the former. We therefore find this animal in almost every part of the world, as it seems fitted for the necessities of man in both extremes. Towards the north, where the pasture is coarse and barren, the goat is fitted to find a scanty subsistence; between the tropics, where the heat is excessive, the goat is fitted to bear the climate, and its flesh is found to improve.

One of the most remarkable varieties we find in the goat is in that of Natolia. The Natolian goat, or, as M. Buffon calls it, *the goat of Angora*, has the ears longer than ours, and broader in proportion. The male has horns of about the same length with the Goat of Europe, but black, and turned very differently, going out horizontally on each side of the head, and twisted round in the manner of a cork-screw. The horns of the female are shorter, and encircle the ear somewhat like those of the ram. They are of a dazzling white colour, and in all the hair is very long, thick, fine, and glossy, which indeed, is the case with almost all the animals of Syria. There are a great number of these animals about Angora, where the inhabitants drive a trade with their hair, which is sold, either raw or manufactured, into all parts of Europe. Nothing can exceed the beauty of the stuffs which are made from the hair of almost all the animals of that country. These are well known among us by the name of *camlet*.

A second variety is the Assyrian goat of Gesner, which is somewhat larger than ours, with ears almost hanging down to the ground, and broad in proportion. The horns, on the contrary, are not above two inches and a half long, black, and bending a little backwards. The hair is of a fox colour, and under the throat there are two excrescences like the gills of a cock. These animals are chiefly kept round Aleppo for the sake of their milk. They are driven through the streets, and their milk is sold to the inhabitants as they pass along.

In the third variety may be reckoned the little goat of Africa, which is of the size of a kid, but the hair is as long as that of the ordinary breed. The horns, which do not exceed the length of a man's finger, are thick, and bent downwards so close to the head that they almost enter the skin.

There is an animal of this kind at the Cape of Good Hope, called the blue-goat,* which may be ranked as the fourth variety. It is in shape like the domestic, but much larger, being nearly of the size of a stag. Its hair is very short, and of a delightful blue; but it loses a great deal of its beauty when the animal is dead. It has a very long beard; but the horns are not so long in proportion as in other goats, being turned spirally, in the manner of a cork-screw. It has very long legs, but well proportioned; and the flesh is very well tasted, but lean. For this reason, in that plentiful country it is chiefly killed upon account of its skin. It is a very shy animal, and seldom comes near the Dutch settlements; but they are found in great abundance in the more uncultivated parts of the country. Besides these, they are found in this extensive region of various colours, and many of them are spotted beautifully, with red, white, and brown.

* Now generally called the Blue Antelope.

In fine, the Judah goat resembles ours in most parts, except in size, it being much smaller. This animal is common in Guinea, Angola, and all along the coast of Africa; it is not much larger than the hare, but it is extremely fat, and its flesh admirably tasted. It is in that country universally preferred to mutton.

These animals seem all of one kind. with very trifling distinctions between them. It is true that they differ in some respects, such as having neither the same colour, hair, ears, or horns. But it ought to be considered as a rule in natural history, that neither the horns, the colour, the fineness, or the length of the hair, nor the position of the ears, are to be considered as making an actual distinction in the kinds. These are accidental varieties, produced by climate and food, which are known to change even in the same animal, and give it a seeming difference of form. When we see the shapes, the inclinations, and the internal conformation of seemingly different creatures nearly the same; and, above all, when we see them producing among each other, we then have no hesitation in pronouncing the species, and asserting that these are of the goat kind, with which they are so materially connected.

But although these are evidently known to belong to the goat kind, there are others nearly resembling the goat, of whose kindred we cannot be equally certain. These are such as, being found in a state of nature, have not as yet been sufficiently subjected to human observation. Hence it is impossible to determine with precision to which class they belong; whether they be animals of a particular kind, or merely the goat in its state of savage freedom. Were there but one of these wild animals, the inquiry would soon be ended, and we might readily allow it for the parent stock; but in the present case there

are two kinds that have almost equal pretensions to this honour, and the claims of which it has been found difficult to determine. The animals in question are the Chamois and the Ibex. These both bear very near approaches to the goat in figure; have horns that never shed: and, at the same time, are more different from each other than from the animal in question. From which of these two sources our domestic goat is derived, is not easy to settle. Instead, therefore, of entering into the discussion, I will content myself with the result of M. Buffon's inquiries. He is of opinion that the ibex is the principal source, that our domestic goat is the immediate descendant, and that the chamois is but a variety from that stock, a sort of collateral branch of the same family. His principal reason for giving the preference to the ibex, is its having a more masculine figure, large horns, and a large beard; whereas the chamois wants these marks of primitive strength and wildness. He supposes, therefore, in their original savage state, that our goat has taken after the male of the parent stock, and the chamois after the female; and that this has produced a variety in these animals, even before they underwent human cultivation.

However this be, the two animals in question seem both well fitted for their precarious life, being extremely swift, and capable of running with ease along the ledges of precipices, where even the wolf or the fox, though instigated by hunger, dare not pursue them. They are both natives of the Alps, the Pyrenees, and the mountains of Greece; there they propagate in vast numbers, and continue to exist, in spite of the hunter, and every beast of prey that is found incessantly to pursue them.

The ibex resembles the goat in the shape of its body, but differs in the horns, which are much larger.

They are bent backward, full of knots; and it is generally asserted that there is a knot added every year. There are some of these found, if we can believe Bellonius, at least two yards long. The ibex has a large black beard, is of a brown colour, with a thick warm coat of hair. There is a streak of black runs along the top of the back, and the belly and back of the thighs are of a fawn colour.

The chamois,* though a wild animal, is very easily tamed, and docile, and to be found only in rocky and mountainous places. It is about the size of a domestic goat, and resembles one in many respects. It is most agreeably lively, and active beyond expression. The chamois's hair is short, like that of the doe; in spring it is of an ash colour, in autumn a dun colour, inclining to black, and in winter of a blackish-brown. This animal is found in great plenty in the mountains of Dauphiny, of Piedmont, Savoy, Switzerland, and Germany. They are peaceful gentle creatures, and live in society with each other. They are found in flocks of from four to fourscore, and even a hundred, dispersed upon the crags of the mountains. The large males are seen feeding detached from the rest, except in rutting time, when they approach the females, and drive away the young. The time of their coupling is from the latter end of September to the end of November, and they bring forth in February, March, and April. The young keeps with the dam for about five months, and sometimes longer, if the hunters and the wolves do not separate them. It is asserted that they live between twenty and thirty years. Their flesh is good to eat; and they are found to have ten or twelve pounds of suet, which far surpasses that of the goat in hardness and goodness. The chamois has scarcely any cry, as most animals are known to have; if it has

* M. Perond's Account, as quoted by Buffon.

1. Ibex – 2. Chamois – 3. Gazelle or Antelope.

any, it is a kind of feeble bleat, by which the parent calls its young. But in cases of danger, and when it is to warn the rest of the flock, it uses a hissing noise, which is heard at a great distance. For it is to be observed, that this creature is extremely vigilant, and has an eye the quickest and most piercing in nature. Its smell also is not less distinguishing. When it sees its enemy distinctly, it stops for a moment, and then, if the person be near, in an instant after it flies off. In the same manner, by its smell, it can discover a man at half a league distance, and gives the earliest notice. Upon any alarm, therefore, or any apprehensions of danger, the chamois begins his hissing note with such force, that the rocks and the forests re-echo to the sound. The first hiss continues as long as the time of one inspiration. In the beginning it is very sharp, and deeper towards the close. The animal having, after this first alarm, reposed a moment, again looks round, and perceiving the reality of its fears, continues to hiss by intervals, until it has spread the alarm to a very great distance. During this time it seems in the most violent agitation; it strikes the ground with its fore-foot, and sometimes with both; it bounds from rock to rock; it turns and looks round; it runs to the edge of the precipice; and, still perceiving the enemy, flies with all its speed. The hissing of the male is much louder and sharper than that of the female; it is performed through the nose, and is properly no more than a very strong breath, driven violently through a small aperture. The chamois feeds upon the best herbage, and chooses the most delicate parts of the plants, the flower, and the tender buds. It is not less delicate with regard to several aromatic herbs, which grow upon the sides of the mountains. It drinks but very little while it feeds upon the succulent herbage, and chews the cud in the intervals of feeding. This ani-

mal is greatly admired for the beauty of its eyes, which are round and sparkling, and which mark the warmth of its constitution. Its head is furnished with two small horns, of about half a foot long, of a beautiful black, and rising from the forehead almost betwixt the eyes. These, contrary to what they are found in other animals, instead of going backwards or sidewise, jet out forward, and bend a little at their extremities backward, in a small circle, and end in a very sharp point. The ears are placed in a very elegant manner, near the horns; and there are two stripes of black on each side of the face, the rest being of a whitish yellow, which never changes. The horn of this animal is often used as the head of a cane. Those of the female are less, and not so much bent; and some farriers are seen to bleed cattle with them. These animals are so much incommoded by heat, that they are never found in summer, except in the caverns of rocks, amidst fragments of unmelted ice, under the shade of high and spreading trees, or of rough and hanging precipices, that face the north, and which keep off entirely the rays of the sun. They go to pasture both morning and evening, and seldom during the heat of the day. They run along the rocks with great ease and seeming indifference, and leap from one to another, so that no dogs are able to pursue them. There is nothing more extraordinary than to see them climbing and descending precipices, that to all other quadrupeds are inaccessible. They always mount or descend in an oblique direction; they throw themselves down a rock of thirty feet, and light with great security upon some excrescence or fragment, on the side of the precipice, which is just large enough to place their feet upon; they strike the rock, however, in their descent, with their feet, three or four times, to stop the velocity of their motion; and,

when they have got upon their base below, they at once seem fixed and secure. In fact, to see them jump in this manner, they seem rather to have wings than legs; some, indeed, pretend to say that they use their horns for climbing, but this wants confirmation. Certain it is that their legs alone are formed for this arduous employment, the hinder being rather longer than the former, and bending in such a manner, that when they descend upon them, they break the force of the fall. It is also asserted, that when they feed, one of them always stands as sentinel; but how far this may be true is questionable. For certain, while they feed, there are some of them that keep continually gazing round the rest; but this is practised among all gregarious animals, so that, when they see any danger, they warn the rest of the herd of its approach. During the rigours of winter the chamois sleeps in the thicker forests, and feeds upon the shrubs and the buds of the pine tree. It sometimes turns up the snow with its foot to look for herbage, and where it is green makes a delicious repast. The more craggy and uneven the forest, the more this animal is pleased with the abode, which thus adds to its security. The hunting the chamois is very laborious, and extremely difficult. The most usual way is to hide behind the clefts of the rocks, and shoot them. This, however, must be done with great precaution; the sportsman must creep for a vast way upon his belly, in silence, and take also the advantage of the wind, which if it blow from him they would instantly perceive. When arrived at a proper distance, he then advances his piece, which is to be rifle-barrelled, and to carry one ball, and tries his fortune among them. Some also pursue this animal as they do the stag, by placing proper persons at all the passages of a glade, or valley, and then sending in others to rouse the game. Dogs are quite

useless in this chase, as they rather alarm than overtake. Nor is it without danger even to the men; for it often happens that when the animal finds itself overpressed, it drives at the hunter with its head, and often tumbles him down the neighbouring precipice. This animal cannot go upon ice when smooth; but if there be the least inequalities on its surface, it then bounds along in security, and quickly evades all pursuit.

The skin of the chamois was once famous when tanned for its softness and warmth; at present, however, since the art of tanning has been brought to greater perfection, the leather called *shammoy* is made also from those of the tame goat, the sheep, and the deer. Many medicinal virtues also were said to reside in the blood, fat, gall, and the concretion sometimes found in the stomach of this animal, called the *German bezoar*. The fat, mixed with milk, was said to be good in ulcers of the lungs. The gall was said to be useful in strengthening the sight; the stone, which is generally about the size of a walnut, and blackish, was formerly in great request for having the same virtues with oriental bezoar. However, in the present enlightened state of physic, all these medicines are quite out of repute; and although we have the names of several medicines procurable from quadrupeds, yet, except the musk or hartshorn alone, I know of none in any degree of reputation. It is true, the fat, the urine, the beak, and even the dung of various animals, may be found efficacious, where better remedies are not to be had; but they are far surpassed by many at present in use, whose operations we know, and whose virtues are confirmed by repeated experience.

Such are the quadrupeds that more peculiarly belong to the goat kind. Each of these, in all proba-

bility, can engender and breed with the other; and were the whole race extinguished except any two, these would be sufficient to replenish the world, and continue the kind. Nature, however, proceeds in her variations by slow and insensible degrees, and scarcely draws a firm distinguished line between any two neighbouring races of animals whatsoever. Thus it is hard to discover where the sheep ends and the goat begins; and we shall find it still harder to fix precisely the boundaries between the goat kind and the deer. In all transitions from one kind to the other, there is to be found a middle race of animals, that seem to partake of the nature of both, and that can precisely be referred to neither. That race of quadrupeds called the *Gazelles* are of this kind; they are properly neither goat nor deer, and yet they have many of the marks of both—they make the shade between these two kinds, and fill up the chasm of nature.

THE GAZELLES.

The Gazelles, of which there are several kinds, can with propriety be referred neither to the goat nor the deer, and yet they partake of both natures. Like the goat, they have hollow horns that never fall, which is otherwise in the deer; they have a gall-bladder, which is found in the goat, and not in the deer; and, like that animal, they feed rather upon shrubs than grassy pasture. On the other hand, they resemble the roebuck in size and delicacy of form; they have deep pits under the eyes like that animal; they resemble the roebuck in the colour and nature of their hair; they resemble him in the bunches upon their legs, which only differ in being

upon the fore-legs in these, and on the hind-legs in the other. They seem, therefore, to be of a middle nature between these two kinds; or to speak with greater truth and precision, they form a distinct kind by themselves.*

The distinguishing marks of this tribe of animals, by which they differ both from the goat and the deer, are these: their horns are made differently, being annulated or ringed round, at the same time that there are longitudinated depressions running from the bottom to the point. They have bunches of hair upon their fore-legs; they have a streak of black, red, or brown, running along the lower part of their sides, and three streaks of whitish hair in the internal side of the ear. These are characters that none of them are without: besides these, there are others which in general they are found to have, and which are more obvious to the beholder. Of all animals in the world, the gazelle has the most beautiful eye, extremely brilliant, and yet so meek, that all the eastern poets compare the eyes of their mistresses to those of this animal. A gazelle-eyed beauty is considered as the highest compliment that a lover can pay; and indeed the Greeks themselves thought it no inelegant piece of flattery to resemble the eyes of a beautiful woman to those of a cow. The gazelle, for the most part, is more delicately and finely limbed than even the roebuck; its hair is as short, but finer and more glossy. Its hinder legs are longer than those before, as in the hare, which gives it greater security in ascending or descending steep places. Their swiftness is equal, if not superior to that of the roe; but as the latter bounds forward, so these run along in an even uninterrupted course. Most of them are brown upon the back,

[* This tribe of animals is now generally distinguished by the common name of *Antelope*.]

white under the belly, with a black stripe separating those colours between. Their tail is of various lengths, but in all covered with pretty long hair; and their ears are beautiful, well placed, and terminating in a point. They all have a cloven hoof, like the sheep; they all have permanent horns, and the female has them smaller than the male.

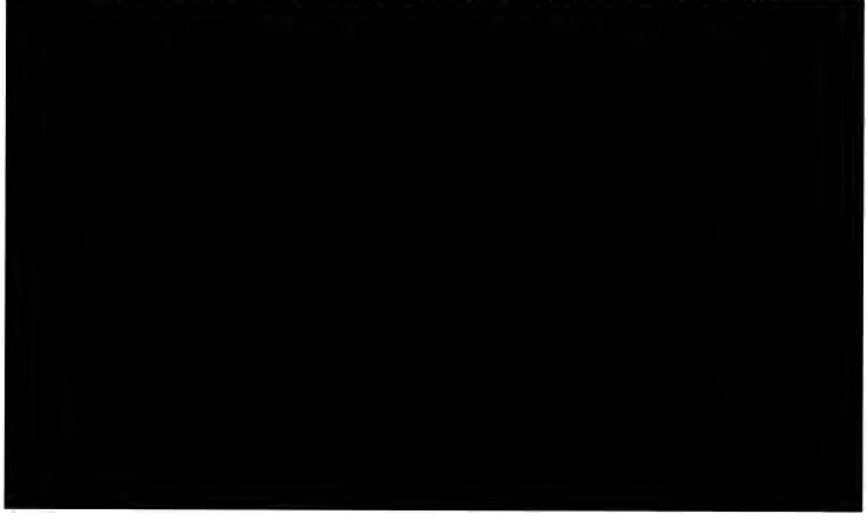
Of these animals M. Buffon makes twelve varieties, which, however, is much fewer than what other naturalists have made them. The first is the *Gazella*, properly so called, which is of the size of the roebuck, and very much resembling it in all the proportions of its body, but entirely differing, as was said in the nature and fashion of the horns, which are black and hollow like those of the ram or the goat, and never fall. The second he calls the *Kevel*, which is rather less than the former; its eyes also seem larger; and its horns, instead of being round, are flatted on the sides, as well in the male as the female. The third he calls the *Corin*, which very much resembles the two former, but that it is still less than either. Its horns also are smaller in proportion, smoother than those of the other two, and the annular prominences belonging to the kind are scarcely discernible, and may be rather called wrinkles than prominences. Some of these animals are often seen streaked like the tiger. These three are supposed to be of the same species. The fourth he calls the *Zeiram*, the horns only of which he has seen; which, from their size, and the description of travellers, he supposes to belong to a larger kind of the gazelle, found in India and Persia under that denomination.

The fifth he calls the *Koba*, and the sixth the *Kob;* these two differ from each other only in size, the former being much larger than the latter. The muzzle of these animals is much longer than those

of the ordinary gazelle; the head is differently shaped, and they have no depressions under the eyes. The seventh he calls after its Egyptian name, the *Algazel;* which is shaped pretty much like the ordinary gazelle, except that the horns are much longer, being generally three feet from the point to the insertion, whereas in the common gazelle they are not above a foot; they are smaller also and straighter, till near the extremities, when they turn short, with a very sharp flexure: they are black and smooth, and the annular prominences are scarcely observable. The eighth is called the *Pazan*, or, by some, the *Bezoar Goat;* which greatly resembles the former, except a small variety in their horns; and also with this difference, that as the algazel feeds upon the plains, this is only found in the mountains. They are both inhabitants of the same countries and climate, being found in Egypt, Arabia, and Persia. This last is the animal famous for that concretion in the intestines or stomach, called the *Oriental Bezoar*, which was once in such repute all over the world for its medicinal virtues. The word *bezoar* is supposed to take its name either from the pazan or pazar, which is the animal that produces it, or from a word in the Arabic language which signifies *antidote* or *counter poison*. It is a stone of a glazed blackish colour, found in the stomach or the intestines of some animal, and brought over to us from the East Indies. Like all other animal concretions, it is found to have a kind of nucleus or hard substance within, upon which the external coatings were formed: for, upon being cut through, it is seen to have layer over layer, as in an onion. This nucleus is of various kinds; sometimes the buds of a shrub, sometimes a piece of stone, and sometimes a marcasite. This stone is from the size of an acorn to that of a pigeon's egg; the larger the stone, the more

valuable it is held, its price increasing like that of a diamond. There was a time when a stone of four ounces sold in Europe for above two hundred pounds; but at present the price is greatly fallen, and they are in very little esteem. The bezoar is of various colours; sometimes of a blood colour, sometimes of a pale yellow, and of all the shades between these two. It is generally glossy, smooth, and has a fragrant smell, like that of ambergris, probably arising from the aromatic vegetables upon which the animal that produces it feeds. It has been given in vertigoes, epilepsies, palpitations of the heart, cholic, jaundice, and, in those places where the dearness and not the value of medicines is consulted, in almost every disorder incident to man. In all, perhaps, it is equally efficacious, acting only as an absorbent powder, and possessing virtues equal to common chalk, or crab's claws. Judicious physicians have therefore discarded it; and this celebrated medicine is now chiefly consumed in countries where the knowledge of nature has been but little advanced. When this medicine was in its highest reputation, many arts were used to adulterate it, and many countries endeavoured to find out a bezoar of their own. Thus we had occidental bezoar, brought from America; German bezoar, which has been mentioned before; cow bezoar, and monkey bezoar. In fact, there is scarcely an animal, except of the carnivorous kinds, that does not produce some of these concretions in the stomach, intestines, kidneys, bladder, and even in the heart. To these, ignorance may impute virtues that they do not possess: experience has found but few cures wrought by their efficacy; but it is well known that they often prove fatal to the animal that bears them. These concretions are generally found in cows, by their practice of licking off their hair, which gathers in the stomach into the

shape of a ball, acquires a surprising degree of hardness, and sometimes a polish like leather. They are often as large as a goose egg; and, when become too large to pass, block up the passage of the food, and the animal dies. The substance of these balls, however, is different from the bezoar mentioned above, being rather a concretion of hair than of stone. There is a bezoar found in the gall-bladder of a boar, and thence called hog bezoar, in very great esteem; but perhaps with as little justice as any of the former. In short, as we have already observed, there is scarcely an animal, or scarcely a part of their bodies, in which concretions are not formed; and it is more than probable, as M. Buffon justly remarks, that the bezoar so much in use formerly was not the production of the pazar, or any one animal only, but that of the whole gazelle kind; who, feeding upon odoriferous herbs and plants, gave this admirable fragrance to the accidental concretions which they were found to produce. As this medicine, however, is but little used at present, our curiosity is much abated as to the cause of its formation. To return, therefore, to the varieties in the gazelle tribe, the ninth is called the *Ranguer*, and is a native of Senegal. This differs somewhat in shape and colour from the rest; but particularly in the shape of its horns, which



ches asunder. They have the annular prominences of their kind, but not so distinguishable as in the gazelle; however, they have a double flexure, which is very remarkable, and serves to distinguish them from all others of their kind. At the root they have a tuft of hair, which is longer than that of any part of the body. Like others of the same kind, the antelope is brown on the back, and white under the belly; but these colours are not separated by the black streak which is to be found in all the rest of the gazelle kinds. There are different sorts of this animal, some with larger horns than others, and others with less. The one which makes the eleventh variety in the gazelle kind, M. Buffon calls the *Lidme*, which has very long horns; and the other, which is the twelfth and last, he calls the *Indian Antelope*, the horns of which are very small.

To these may be added three or four varieties more, which it is not easy to tell whether to refer to the goat or the gazelle, as they equally resemble both. The first of these is the *Bubalus*, an animal that seems to partake of the mixed natures of the cow, the goat, and the deer. It resembles the stag in the size and the figure of its body, and particularly in the shape of its legs. But it has permanent horns like the goat, and made entirely like those of the gazelle kind. It also resembles that animal in its way of living; however, it differs in the make of its head, being exactly like the cow in the length of its muzzle, and in the disposition of the bones of its skull, from which similitude it has taken its name. This animal has a narrow long head; the eyes are placed very high; the forehead short and narrow; the horns permanent, about a foot long, black, thick, annulated, and the rings of the gazelle kind remarkably large; its shoulders are very high, and it has a kind of bunch on them that terminates at the neck; the tail is about

a foot long, and tufted with hair at the extremity. The hair of this animal is remarkable in being thicker at the middle than at the root: in all other quadrupeds, except the elk and this, the hair tapers off from the bottom to the point; but in these, each hair seems to swell in the middle like a nine-pin. The bubalus also resembles the elk in size, and the colour of its skin; but these are the only similitudes between them: as the one has a very large branching head of solid horns, that are naturally deciduous, the other has black unbranching hollow horns, that never fall. The bubalus is common enough in Barbary, and has often been called by the name of the *Barbary Cow*, from which animal it differs so widely. It partakes pretty much of the nature of the antelope: like that having the hair short, the hide black, the ears pointed, and the flesh good for food.

The second anomalous animal of the goat kind M. Buffon calls the *Condoma*. It is supposed to be equal in size to the largest stag, but with hollow horns like those of the goat kind, and with varied flexures like those of the antelope. They are above three feet long, and at their extremities about two feet asunder. All along the back there runs a white list, which ends at the insertion of the tail: another of the same colour crosses this at the bottom of the neck, which it entirely surrounds; there are two more of the same kind running round the body, one behind the fore-legs, and the other running parallel to it before the hinder. The colour of the rest of the body is grayish, except the belly, which is white: it has also a long gray beard; and its legs, though long, are well proportioned.

The third that may be mentioned he calls the *Guiba*. It resembles the gazelles in every particular, except in the colour of the belly, which as we have seen, is white in them, but in this is of a deep

Engd by G.B.Ellis

1. Guib or Harnessed Antelope _ 2. Codous or Indian Antelope _ 3. Nanguar _ 4. Chevrotin.

brown. Its horns, also, are not marked with annular prominences, but are smooth and polished. It is also remarkable for white lists, on a brown ground, that are disposed along the animal's body, as if it were covered with harness. Like the former it is a native of Africa.

The *African Wild Goat* of Grimmius is the fourth. It is of a dark ash colour; and in the middle of the head is a hairy tuft, standing upright: on both sides between the eyes and the nose, there are very deep cavities, greater than those of the other kinds, which contain a yellow oily liquor, which coagulates into a black substance that has a smell between musk and civet. This being taken away, the liquor again runs out, and coagulates as before. These cavities have no communication with the eyes, and consequently this oozing substance can have nothing of the nature of tears.

[To these may be added the *Chevrotin*, or Pigmy Antelope. This beautiful species appears to have been frequently confounded with the Pigmy Musk, which it resembles in size as well as in colour and manners. It is a native of the hottest parts of Africa, and being completely formed like a stag in miniature, it has been sometimes called the Little Guinea Deer. It is easily tamed, but of so tender a nature as not to admit of being brought alive into Europe. So remarkable are its powers of activity in its native regions, that it is said to be able to leap over a wall of twelve feet in height. Its colour is a bright bay, paler beneath, and on the insides of the limbs; its height not more than eight inches, and about twelve from the point of the nose to the insertion of the tail. The horns are straight, short, strong, sharp pointed, smooth, and perfectly black. The legs are scarcely thicker than a quill, and have been frequently capped at the upper joint with gold or silver,

and in that state used by way of tobacco stoppers. The female has no horns.*]

Such is the list of the gazelles, all which pretty nearly resemble the deer in form and delicacy of shape, but have the horns hollow, single and permanent, like those of the goat. They properly fill up, as has been already observed, the interval between these two kinds of animals; so that it is difficult to tell where the goat ends and the deer may be said to begin. If we compare the gazelles with each other, we shall find but very slight distinctions between them. The turn or the magnitude of the horns, the different spots on the skin, or a difference of size in each, are chiefly the marks by which their varieties are to be known; but their way of living, their nature, and their peculiar swiftness, all come under one description.

The gazelles are, in general, inhabitants of the warmer climates, and contribute among other embellishments, to add beauty to those forests that are forever green. They are often seen feeding in herds on the sides of the mountains, or in the shade of the woods, and fly all together upon the smallest approaches of danger. They bound with such swiftness, and are so very shy, that dogs or men vainly attempt to pursue them. They traverse those precipices with ease and safety, which to every quadruped else are quite impracticable; nor can any animals but of the winged kind overtake them. Accordingly, in all those countries where they are chiefly found, they are pursued by falcons; and this admirable manner of hunting makes one of the principal amusements of the upper ranks of people all over the East.

The Arabians, Persians, and Turks, breed up for this purpose that kind of hawk called the *Falcon*

* Shaw's Zoology.

Gentle, with which when properly trained they go forth on horseback among the forests and the mountains, the falcon perching upon the hand of the hunter. Their expedition is conducted with profound silence; their dogs are taught to hang behind, while the men, on the fleetest coursers, look round for the game. Whenever they spy a gazelle at the proper distance, they point the falcon to its object, and encourage it to pursue. The falcon, with the swiftness of an arrow, flies to the animal; that, knowing its danger, endeavours but too late, to escape. The falcon soon coming up with its prey, fixes its talons, one into the animal's cheek, the other into its throat, and deeply wounds it. On the other hand, the gazelle attempts to escape, but is generally wounded too severely to run far. The falcon clings with the utmost perseverance, nor ever leaves its prey till it falls; upon which the hunters from behind approaching take up both, and reward the falcon with the blood of the spoil. They also teach the young ones, by applying them to the dead animal's throat, and accustoming them betimes to fix upon that particular part; for if it should happen that the falcon fixed upon any other part of the gazelle, either its back or its haunches, the animal would easily escape among the mountains, and the hunter would also lose his falcon.

They sometimes also hunt these animals with the ounce. This carnivorous and fierce creature being made tame and domestic, generally sits on horseback behind the hunter, and remains there with the utmost composure, until the gazelle is shown; it is then that it exerts all its arts and fierceness: it does not at once fly at its prey, but approaches slily, turning and winding about until it comes within the proper distance, when all at once it bounds upon the heedless animal, and instantly kills it, and sucks its

blood. If, on the other hand, it misses its aim, it rests in its place, without attempting to pursue any farther, but seems ashamed of its own inability.

There is still another way of taking the gazelle, which seems not so certain nor so amusing as either of the former. A tame gazelle is bred up for this purpose, who is taught to join those of its kind wherever it perceives them. When the hunter, therefore, perceives a herd of these together, he fixes a noose round the horns of the tame gazelle, in such a manner that if the rest but touch it, they are entangled; and thus prepared he sends his gazelle among the rest. The tame animal no sooner approaches, but the males of the herd instantly sally forth to oppose him; and, in butting with their horns, are caught in the noose. In this, both struggling for some time, fall together to the ground; and, at last, the hunter coming up, disengages the one, and kills the other. Upon the whole, however, these animals, whatever be the arts used to pursue them, are very difficult to be taken. As they are continually subject to alarms from carnivorous beasts, or from man, they keep chiefly in the most solitary and inaccessible places, and find their only protection from situations of the greatest danger.

CHAPTER XII.

THE MUSK ANIMAL.

The more we search into nature, the more we shall find how little she is known; and we shall more than once have occasion to find, that protracted inquiry is more apt to teach us modesty than to produce information. Although the number and

nature of quadrupeds, at first glance, seems very little known, yet, when we come to examine closer, we find some with which we are very partially acquainted, and others that are utterly unknown. There is scarcely a cabinet of the curious but what has the spoils of animals, or the horns or the hoofs of quadrupeds, which do not come within former descriptions. There is scarcely a person whose trade is to dress or improve furs, but knows several creatures by their skins, which no naturalist has hitherto had notice of. But of all quadrupeds, there is none so justly the reproach of natural historians, as that which bears the musk. This perfume, so well known to the elegant, and so very useful in the hands of the physician, a medicine that has for more than a century been imported from the East in great quantities, and during all that time has been improving in its reputation, is nevertheless so very little understood, that it remains a doubt whether the animal that produces it be a hog, an ox, a goat, or a deer.*

[* This class of Quadrupeds is now better known. They have eight small cutting teeth in the lower jaw; in the upper, no cutting or fore-teeth, but two long tusks, one on each side, projecting out of the mouth.

The Thibet Musk has a bag or tumour on the belly, near the navel, and a very short tail almost hid in the fur. The male measures about three feet three inches from the nose to the origin of the tail, and is about two feet three inches high at the shoulder; the female is less than the male, has a sharper nose, has no tusks nor musk-bag, and is provided with two teats. The head resembles that of the roe: the fur is coarse like that of the animals of the deer kind, but softer, very smooth, erect, plentiful, thick, and long; the colour varies according to the age of the animal and time of the year, but is chiefly blackish-brown on the upper, and hoary, seldom white, on the under parts of the body: the hoofs are long, black, and much divided, and the spurious hoofs of the fore-feet are very long. It inhabits the Asiatic Alps, especially the highest rocky mountains from the Altaic chain to that which divides Thibet from India; it is found likewise in China, and in eastern Siberia about lake Baikal and the rivers Jenisea and Argun. The perfume called musk is produced from the male. The bag that contains it is of a somewhat oval figure, flat on one side and rounded on the other, having a small open orifice. In young animals this bag is empty; but in adults it is filled with a clotted, oily, friable matter, of a dark brown colour: this is the true musk, of which each bag con-

When an animal with which we are so nearly connected is so utterly unknown, how little must we know of many that are more remote and unserviceable. Yet naturalists proceed in the same train, enlarging their catalogues and their names, without endeavouring to find out the nature, and fix the precise history of those with which we are very partially acquainted. It is the spirit of the scholars of the present age to be fonder of increasing the bulk of our knowledge than its utility, of extending their conquests than of improving their empire.

The musk which comes to Europe is brought over in small bags, about the size of a pigeon's egg, which, when cut open, appear to contain a kind of

tains from a dram and a half to two drams. The best comes from Thibet; that which is produced in Siberia having somewhat of the flavour of castor.

The Americanus, or Brasilian Musk, of a reddish-brown colour, with a black muzzle and white throat, is scarcely so large as the roebuck. The fur is soft and short; the colour of the head and upper part of the neck is dark brown; the lower part of the neck and throat is white; the body and limbs are reddish-brown: the hind-legs are longer than the fore. This animal inhabits Guiana and Brasil, and is exceedingly timid, active, and swift. Numbers are frequently seen swimming the rivers, and at that time are easily taken: The Indians hunt them, and their flesh is esteemed very delicate. The French of Guiana called them *biches* or *does*, because, notwithstanding their likeness to deer, both sexes are without horns.

The Indicus, or Indian Musk, has short hair of a tawny colour on the upper, and whitish on the under parts of the body; the tail is short, and the feet have spurious hoofs. It inhabits India, and is much of the same size with the Thibet musk, but the tail is longer and more perceptible, the legs are very slender, and the head resembles that of a horse, with erect oblong ears.

The Meminna, or Ceylon Chevrotin, is in length seventeen inches from the nose to the rump, and of a cinereous olive colour; the throat, breast, and belly, are white; the sides and haunches spotted, and barred transversely with white: the ears are large and open; the tail is very short, and the feet have no spurious hoofs. It inhabits Ceylon and Java.

The Javanicus, or Javan Musk, is of a ferruginous colour on the upper parts of the body, and white all along the under; the tail is long and hairy, white below and at the tip; its legs are similar to those of the pigmy musk, and furnished with very small spurious hoofs. This and the Meminna seem only varieties of the Pigmy Musk. *Vide* p. 190.]

dusky reddish substance, like coagulated blood, and which in large quantities has a very strong smell, but when mixed and diffused becomes a very agreeable perfume. Indeed, no substance now known in the world has a stronger or a more permanent smell. A grain of musk perfumes a whole room, and its odour continues for some days without diminution. But in a larger quantity it continues for years together; and seems scarcely wasted in its weight, although it has filled the atmosphere to a great distance with its parts. It is particularly used in medicine in nervous and hysteric disorders; and is found, in such cases, to be the most powerful remedy now in use: however, the animal that furnishes this admirable medicine has been very variously described, and is known but very imperfectly.

The description given of this animal by Grew is as follows: "The musk animal is properly neither of the goat nor deer kind, for it has no horns, and it is uncertain whether it ruminates or not; however, it wants the fore-teeth in the upper jaw, in the same manner as in ruminating animals, but at the same time it has tusks like those of a hog. It is three feet six inches in length from the head to the tail, and the head is above half a foot long. The fore part of the head is like that of a grey-hound; and the ears are three inches long, and erect, like those of a rabbit; but the tail is not above two inches. It is cloven-footed, like beasts of the goat kind: the hair on the head and legs is half an inch long, on the belly an inch and a half, and on the back and buttocks three inches, and proportionably thicker than in any other animal: it is brown and white alternately from the root to the point; on the head and thighs it is brown, but under the belly and tail white, and a little curled, especially on the back and belly. On each side of the lower jaw, under the corners of

the mouth, there is a tuft of thick hair, which is short and hard, and about three quarters of an inch long. The hair in general of this animal is remarkable for its softness and fine texture: but what distinguishes it particularly are the tusks, which are an inch and a half long, and turn back in the form of a hook; and more particularly the bag which contains the musk, which is three inches long, two broad, and stands out from the belly an inch and a half. It is a very fearful animal, and therefore it has long ears; and the sense of hearing is so quick, that it can discover an enemy at a great distance."

[The Pigmy musk is a native of many parts of the East Indies and the Indian islands, and is, according to Pennant, so common in Java, that the natives catch great numbers in snares, and carry them to the markets in cages for sale. This elegant little quadruped has been often confounded with some other species, as well as with the pigmy antelope, an animal equally beautiful and diminutive. It is considerably smaller than a domestic cat, measuring only about nine inches from the nose to the tail. It is of a bright bay colour, white beneath, and on the inside of the thighs. Its shape is very beautiful, and the legs are so slender as scarcely to exceed the thickness of a swan's quill: the head is rather large, as are the ears and eyes, and its general aspect pleasing and mild: there are two tusks in the upper jaw; the tail is about an inch in length; and the feet are remarkable for having no false hoofs, by which this species may be distinguished from the antelope, to which it is similar in size and general appearance. The legs of the pigmy musk, like those of the pigmy antelope, have been frequently capped at the upper joint with gold or silver, and in that state used by way of tobacco-stoppers.*]

* Shaw's Zoology.

After so long and circumstantial a description of this animal, its nature is but very little known; nor has any anatomist as yet examined its internal structure, or been able to inform us whether it be a ruminant animal, or one of the hog kind; how the musk is formed, or whether those bags in which it comes to us be really belonging to the animal, or are only the sophistications of the venders. Indeed, when we consider the immense quantities of this substance which are consumed in Europe alone, not to mention the East, where it is in still greater repute than here, we can hardly suppose that any one animal can furnish the supply, and particularly when it must be killed before the bag can be obtained. We are told, it is true, that the musk is often deposited by the animal upon trees and stones, against which it rubs itself when the quantity becomes uneasy; but it is not in that form which we receive it, but always in what seems to be its own natural bladder. Of these Taverner brought home near two thousand in one year; and as the animal is wild, so many must during that space have been hunted and taken. But as the creature is represented very shy, and as it is found but in some particular provinces of the East, the wonder is how its bag should be so cheap, and furnished in such great plenty. The bag in common does not cost (if I do not forget) above a crown by retail, and yet this is supposed the only one belonging to the animal, and for the obtaining of which it must have been hunted and killed. The only way of solving this difficulty, is to suppose that these bags are in a great measure counterfeit, taken from some other animal, or from some part of the same, filled with its blood and a very little of the perfume, but enough to impregnate the rest with a strong and permanent odour. It comes to us from different parts of the East; from China, Tonquin,

Bengal, and often from Muscovy: that of Thibet is reckoned the best, and sells for fourteen shillings an ounce; that of Muscovy the worst, and sells but for three, the odour of this, though very strong at first, being quickly found to evaporate.

Musk was some years ago in the highest request as a perfume, and but little regarded as a medicine; but at present its reputation is totally changed, and having been found of great benefit in physic, it is but little regarded for the purposes of elegance. It is thus that things which become necessary cease to continue pleasing; and the consciousness of their use destroys their power of administering delight.

CHAPTER XIII.

ANIMALS OF THE DEER KIND.

If we compare the stag and the bull as to shape and form, no two animals can be more unlike; and yet, if we examine their internal structure, we shall find a striking similitude between them. Indeed their differences, except to a nice observer, will scarcely be perceivable. All of the deer kind want the gall-bladder; their kidneys are formed differently; their spleen is also proportionably larger; their tail is shorter; and their horns, which are solid, are renewed every year.* Such are the slight internal discriminations between two animals, one of which is among the swiftest, and the other the heaviest of the brute creation.

The stag is one of those innocent and peaceable animals that seem made to embellish the forest, and

[* These animals have eight fore-teeth in the under jaw, and they have no dog-teeth.]

Engd by G.B.Ellis

1. Stag or Red Deer Male & Female_2. Fallow Deer Male & Female_3. Roebuck.

animate the solitudes of nature. The easy elegance of his form, the lightness of his motions, those large branches that seem made rather for the ornament of his head than its defence, the size, the strength, and the swiftness of this beautiful creature, all sufficiently rank him among the first of quadrupeds, among the most noted objects of human curiosity.

The Stag, or Hart, whose female is called a *hind*, and the young a *calf*, differs in size and in horns from a fallow-deer. He is much larger, and his horns are round, whereas in the fallow kind they are broad and palmated. By these the animal's age is known. The first year the stag has no horns, but a horny excrescence, which is short, rough, and covered with a thin hairy skin. The next year the horns are single and straight; the third year they have two antlers, three the fourth, four the fifth, and five the sixth; this number is not always certain, for sometimes there are more, and often less. When arrived at the sixth year, the antlers do not always increase; and although the number may amount to six or seven on each side, yet the animal's age is then estimated rather from the size of the antlers, and the thickness of the branch which sustains them, than from their variety.

These horns, large as they seem, are notwithstanding shed every year, and new ones come in their place. The old horns are of a firm solid texture, and usually employed in making handles for knives and other domestic utensils. But while young nothing can be more soft or tender; and the animal, as if conscious of his own imbecility at those times, instantly upon shedding his former horns retires from the rest of his fellows, and hides himself in solitudes and thickets, never venturing out to pasture except by night. During this time, which most usually happens in the spring, the new horns are very painful,

and have a quick sensibility of any external impression. The flies also are extremely troublesome to him. When the old horn is fallen off, the new does not begin immediately to appear, but the bones of the skull are seen covered only with a transparent periosteum, or skin, which, as anatomists teach us, covers the bones of all animals. After a short time, however, this skin begins to swell, and to form a soft tumour, which contains a great deal of blood, and which begins to be covered with a downy substance that has the feel of velvet, and appears nearly of the same colour with the rest of the animal's hair. This tumour every day buds forward from the point like the graft of a tree, and rising by degrees from the head, shoots out the antlers on either side, so that in a few days, in proportion as the animal is in condition, the whole head is completed. However, as was said above, in the beginning its consistence is very soft, and has a sort of bark, which is no more than a continuation of the integument of the skull. It is velveted and downy, and every where furnished with blood-vessels that supply the growing horns with nourishment. As they creep along the sides of the branches, the print is marked over the whole surface; and the larger the blood-vessels, the deeper these marks are found to be: from hence arises the inequality of the surface of the deer's horns, which, as we see, are furrowed all along the sides, the impressions diminishing towards the point, where the substance is as smooth and as solid as ivory. But it ought to be observed, that this substance, of which the horns are composed, begins to harden at the bottom, while the upper part remains soft, and still continues growing; from whence it appears that the horns grow differently in deer from those of sheep or cows, in which they are always seen to increase from the bottom. However, when

the whole head has received its full growth, the extremities then begin to acquire their solidity: the velvet covering, or bark, with its blood-vessels, dry up, and then begin to fall; and this the animal hastens, by rubbing its antlers against every tree it meets. In this manner, the whole external surface being stripped off by degrees, at length the whole head acquires its complete hardness, expansion, and beauty.

It would be a vain task to inquire into the cause of the annual production of these horns: it is sufficient to observe, that if a stag be castrated when its horns are fallen off, they will never grow again: and, on the contrary, if the same operation is performed when they are on, they will never fall off. If only one of his testicles is taken out, he will want the horn on that side; if one of the testicles only be tied up, he will want the horn on the opposite side. The increase of their provision also tends to facilitate the growth and the expansion of the horns; and M. Buffon thinks it possible to retard their growth entirely, by greatly retrenching their food.* As a proof of this, nothing can be more obvious than the difference between a stag bred in fertile pastures and undisturbed by the hunter, and one often pursued and ill nourished. The former has his head expanded, his antlers numerous; and the branches thick: the latter has but few antlers, the traces of the blood-vessels upon them are but slight, and the expansion but little. The beauty and size of their horns, therefore, mark their strength and their vigour; such of them as are sickly, or have been wounded, never shooting out that magnificent profusion so much admired in this animal. Thus the horns may, in every respect, be resembled to a vegetable substance, grafted upon the head of an animal. Like a vegetable they grow

* Buffon, vol. xi, p. 113.

from the extremities; like a vegetable they are for a while covered with a bark that nourishes them; like a vegetable they have their annual production and decay; and a strong imagination might suppose that the leafy productions on which the animal feeds, go once more to vegetate in his horns.*

The stag is usually a twelvemonth old before the horns begin to appear, and then a single branch is all that is seen for the year ensuing. About the beginning of spring, all of this kind are seen to shed their horns, which fall off of themselves; though sometimes the animal assists the efforts of nature, by rubbing them against a tree. It seldom happens that the branches on both sides fall off at the same time, there often being two or three days between the dropping of the one and the other. The old stags usually shed their horns first, which generally happens towards the latter end of February, or the beginning of March; those of the second head,(namely, such as are between five and six years old,) shed their horns about the middle or latter end of March; those still younger, in the month of April; and the youngest of all, not till the middle, or the latter end of May: they generally shed them in pools of water, whither they retire from the heat; and this has given rise to the opinion of their always hiding their horns. These rules, though true in general, are yet subject to many variations; and universally it is known that a severe winter retards the shedding of the horns.

The horns of the stag generally increase in thickness and in height, from the second year of its age to the eighth. In this state of perfection they continue during the vigour of life; but as the animal grows old, the horns feel the impressions of age, and shrink like the rest of the body. No branch bears

* M. Buffon has supposed something like this. *Vide passim.*

ness, without having his constitution much affected by the violence of the change. As he is above five years coming to perfection, he lives about forty years; and it is a general rule, that every animal lives about seven or eight times the number of years which it continues to grow. What, therefore, is reported concerning the life of this animal, has arisen from the credulity of ignorance. Some say, that a stag having been taken in France, with a collar on which were written these words, "Cæsar hoc me donavit," this was interpreted of Julius Cæsar; but it is not considered that Cæsar is a general name for kings, and that one of the emperors of Germany, who are always styled Cæsars, might have ordered the inscription.

This animal may differ in the term of his life, according to the goodness of his pasture, or the undisturbed repose he happens to enjoy. These are advantages that influence not only his age, but his size and his vigour. The stags of the plains, the valleys, and the little hills, which abound in corn and pasture, are much more corpulent and much taller than such as are bred on the rocky waste, or the heathy mountain. The latter are low, small, and meagre, incapable of going so swift as the former, although they are found to hold out much longer. They are also more artful in evading the hunters: their horns are generally black and short, while those of the low-land stags are reddish and flourishing; so that the animal seems to increase in beauty and stature in proportion to the goodness of the pasture which he enjoys in security.

The usual colour of the stag in England is red; nevertheless, the greater number in other countries are brown. There are some few that are white; but these seem to have obtained this colour in a former state of domestic tameness. Of all the animals that

are natives of this climate, there are none that have such a beautiful eye as the stag; it is sparkling, soft, and sensible. His senses of smelling and hearing are in no less perfection. When he is in the least alarmed, he lifts the head and erects the ears, standing for a few minutes as if in a listening posture. Whenever he ventures upon some unknown ground, or quits his native covering, he first stops at the skirt of the plain to examine all around; he next turns against the wind to examine by the smell if there be any enemy approaching. If a person should happen to whistle, or call out at a distance, the stag is seen to stop short in his slow measured pace, and gaze upon the stranger with a kind of awkward admiration: if the cunning animal perceives neither dogs nor fire-arms preparing against him, he goes forward, quite unconcerned, and slowly proceeds without offering to fly. Man is not the enemy he is most afraid of; on the contrary he seems to be delighted with the sound of the shepherd's pipe; and the hunters sometimes make use of that instrument to allure the poor animal to his destruction.

The stag eats slowly, and is very delicate in the choice of his pasture. When he has eaten a sufficiency, he then retires to the covert of some thicket to chew the cud in security. His rumination, however, seems performed with much greater difficulty than with the cow or sheep; for the grass is not returned from the first stomach without much straining, and a kind of hiccup, which is easily perceived during the whole time it continues. This may proceed from the greater length of his neck, and the narrowness of the passage, all those of the cow and the sheep kind having it much wider.

This animal's voice is much stronger, louder, and more tremulous, in proportion as he advances in age; in the time of rut it is even terrible. At that season

he seems so transported with passion that nothing obstructs his fury; and when at bay, he keeps the dogs off with great intrepidity. Some years ago, William Duke of Cumberland caused a tiger and a stag to be enclosed in the same area; and the stag made so bold a defence, that the tiger was at last obliged to fly. The stag seldom drinks in the winter, and still less in the spring, while the plants are tender and covered over with dew. It is in the heat of summer, and during the time of rut, that he is seen constantly frequenting the sides of rivers and lakes, as well to slake his thirst as to cool his ardour. He swims with great ease and strength, and best at those times when he is fattest, his fat keeping him buoyant, like oil upon the surface of the water. During the time of rut he even ventures out to sea, and swims from one island to another, although there may be some leagues distance between them.

The cry of the hind, or female, is not so loud as that of the male, and is never excited but by apprehension for herself or her young. It need scarcely be mentioned that she has no horns, or that she is more feeble and unfit for hunting than the male. When once they have conceived, they separate from the males, and then they both herd apart. The time of gestation continues between eight and nine months, and they generally produce but one at a time. Their usual season for bringing forth is about the month of May, or the beginning of June, during which they take great care to hide their young in the most obscure thickets. Nor is this precaution without reason, since almost every creature is then a formidable enemy. The eagle, the falcon, the osprey, the wolf, the dog, and all the rapacious family of the cat kind, are in continual employment to find out her retreat. But, what is more unnatural still, the stag himself is a professed enemy, and she

is obliged to use all her arts to conceal her young from him as from the most dangerous of her pursuers. At this season, therefore, the courage of the male seems transferred to the female; she defends her young against her less formidable opponents by force; and when pursued by the hunter, she ever offers herself to mislead him from the principal objects of her concern. She flies before the hounds for half the day, and then returns to her young, whose life she has thus preserved at the hazard of her own. The *calf*, for so the young of this animal is called, never quits the dam during the whole summer; and in winter, the hind, and all the males under a year old, keep together, and assemble in herds, which are more numerous in proportion as the season is more severe. In the spring they separate; the hinds to bring forth, while none but the year olds remain together: these animals are, however, in general fond of herding and grazing in company; it is danger or necessity alone that separates them.

The dangers they have to fear from other animals, are nothing when compared to those from man. The men of every age and nation have made the chase of the stag one of their most favourite pursuits; and those who first hunted from necessity have continued it for amusement. In our own country, in particular, hunting was ever esteemed as one of the principal diversions of the great.* At first, indeed, the beasts of chase had the whole island for their range, and knew no other limits than those of the ocean.

The Roman jurisprudence, which was formed on the manners of the first ages, estabilised it as a law, that, as the natural right of things which have no master belongs to the first possessor, wild beasts, birds, and fishes, are the property of whosoever could

* British Zoology.

first take them. But the northern barbarians, who overran the Roman empire, bringing with them the strongest relish for this amusement, and being now possessed of more easy means of subsistence from the lands they had conquered, their chiefs and leaders began to appropriate the right of hunting, and instead of a natural right, to make it a royal one. When the Saxon kings, therefore, had established themselves in a heptarchy, the chases were reserved by each sovereign for his own particular amusement. Hunting and war, in those uncivilized ages, were the only employments of the great. Their active but uncultivated minds were susceptible of no pleasures but those of a violent kind, such as gave exercise to their bodies, and prevented the uneasiness of thinking. But as the Saxon kings only appropriated those lands to the business of the chase which were unoccupied before, so no individuals received any injury. But it was otherwise when the Norman kings were settled upon the throne. The passion for hunting was then carried to an excess, and every civil right was involved in general ruin. This ardour for hunting was stronger than the consideration of religion, even in a superstitious age. The village communities, nay, even the most sacred edifices, were thrown down, and all turned into one vast waste, to make room for animals, the objects of a lawless tyrant's pleasure. Sanguinary laws were enacted to preserve the game; and, in the reigns of William Rufus and Henry the First, it was less criminal to destroy one of the human species than a beast of chase. Thus it continued while the Norman line filled the throne; but when the Saxon line was restored, under Henry the Second, the rigour of the forest laws was softened. The barons also for a long time imitated the encroachments, as well as the amusements of the monarch, but when pro-

perty became more equally divided, by the introduction of arts and industry, these extensive hunting grounds became more limited; and as tillage and husbandry increased, the beasts of chase were obliged to give way to others more useful to the community. Those vast tracts of land, before dedicated to hunting, were then contracted; and, in proportion as the useful arts gained ground, they protected and encouraged the labours of the industrious, and repressed the licentiousness of the sportsman. It is, therefore, among the subjects of a despotic government only that these laws remain in full force, where large wastes lie uncultivated for the purpose of hunting, where the husbandman can find no protection from the invasions of his lord, or the continual depredations of those animals which he makes the objects of his pleasure.

In the present cultivated state of this country, therefore, the stag is unknown in its wild natural state; and such of them as remain among us are kept, under the name of *red deer*, in parks among the fallow deer. But they are become less common than formerly;—its excessive viciousness during the rutting season, and the badness of its flesh, inducing most people to part with the species. The few that still remain wild are to be found on the moors that border on Cornwall and Devonshire; and in Ireland, on most of the large mountains of that country.

In England, the hunting the stag and the buck are performed in the same manner; the animal is driven from some gentleman's park, and then hunted through the open country. But those who pursue the wild animal have a much higher object, as well as a greater variety in the chase. To let loose a creature that was already in our possession, in order to catch it again, is, in my opinion, but a poor

pursuit, as the reward, when obtained, is only what we before had given away. But to pursue an animal that owns no proprietor, and which he that first seizes may be said to possess, has something in it that seems at least more rational; this rewards the hunter for his toil, and seems to repay his industry. Besides, the superior strength and swiftness of the wild animal prolongs the amusement; it is possessed of more various arts to escape the hunter, and leads him to precipices where the danger ennobles the chase. In pursuing the animal let loose from a park, as it is unused to danger, it is but little versed in the stratagems of escape; the hunter follows as sure of overcoming, and feels none of those alternations of hope and fear which arise from the uncertainty of success. But it is otherwise with the mountain stag: having spent his whole life in a state of continual apprehension; having frequently been followed, and as frequently escaped, he knows every trick to mislead, to confound, or intimidate his pursuers; to stimulate their ardour, and enhance their success.

Those who hunt this animal have their peculiar terms for the different objects of their pursuit. The professors in every art take a pleasure in thus employing a language known only to themselves, and thus accumulate words which to the ignorant have the appearance of knowledge. In this manner, the stag is called the first year a *calf*, or *hind calf;* the second year, a *knobber;* the third, a *brock;* the fourth, a *staggard;* the fifth, a *stag;* the sixth, a *hart;* The female is called a *hind;* the first year she is a *calf;* the second, a *hearse;* the third, a *hind.* This animal is said to *harbour* in the place where he resides. When he cries, he is said to *bell;* the print of his hoof is called the *slot;* his tail is called the *single;* his excrement the *fumet;* his horns are cal-

led his *head;* when simple, the first year they are called *broches;* the third year, *spears;* the fourth year, that part which bears the antlers is called the *beam*, and the little impressions upon its surface, *glitters;* those which rise from the crust of the *beam* are called *pearls.* The antlers also have distinct names: the first that branches off is called the *antler;* the second, the *sur-antler;* all the rest which grow afterwards, till you come to the top, which is called the *crown*, are called *royal antlers.* The little buds about the tops are called *croches.* The impression on the place where the stag has lain, is called the *layer.* If it be in covert or a thicket, it is called his *harbour.* When a deer has passed into a thicket, leaving marks whereby his bulk may be guessed, it is called an *entry.* When they cast their heads, they are said to *mew.* When they rub their heads against trees to bring off the peel of their horns, they are said to *fray.* When a stag hard hunted takes to swimming in the water, he is said to *go sail;* when he turns his head against the hounds, he is said to *bay*; and when the hounds pursue upon the scent until they have unharboured the stag, they are said to *draw on the slot.*

Such are but a few of the many terms used by hunters in pursuing of the stag, most of which are now laid aside, or in use only among game-keepers. The chase, however, is continued in many parts of the country where the red deer is preserved, and still makes the amusement of such as have not found out more liberal entertainments. In those few places where the animal is perfectly wild, the amusement, as was said above, is superior. The first great care of the hunter, when he leads out his hounds to the mountain side, where the deer are generally known to harbour, is to make choice of a proper stag to pursue. His ambition is to unhar-

bour the largest and the boldest of the whole herd; and for this purpose he examines the track, if there be any, which if he finds long and large, he concludes that it must have belonged to a stag, and not a hind, the print of whose foot is rounder. Those marks also which he leaves on trees, by the rubbing of his horns, show his size, and point him out as the proper object of pursuit. Now to seek out a stag in his haunt, it is to be observed, that he changes his manner of feeding every month. From the conclusion of rutting time, which is November, he feeds in heaths and broomy places. In December they herd together, and withdraw into the strength of the forests, to shelter themselves from the severe weather feeding on holm, elder trees, and brambles. The three following months they leave herding, but keep four or five in a company, and venture out to the corners of the forest, where they feed on winter pasture, sometimes making their incursions into the neighbouring corn-fields, to feed upon the tender shoots just as they peep above ground. In April and May they rest in thickets and shady places, and seldom venture forth, unless roused by approaching danger. In September and October their annual ardour returns; and then they leave the thickets, boldly facing every danger, without any certain place for food or harbour. When, by a knowledge of these circumstances, the hunter has found out the residence and the quality of his game, his next care is to uncouple and cast off his hounds in the pursuit: these no sooner perceive the timorous animal that flies before them, but they altogether open in full cry, pursuing rather by the scent than the view, encouraging each other to continue the chase, and tracing the flying animal with the most amazing sagacity. The hunters also are not less ardent in their speed on horseback, cheering up the dogs, and

directing them where to pursue. On the other hand the stag, when unharboured, flies at first with the swiftness of the wind, leaving his pursuers several miles in the rear; and at length, having gained his former coverts, and no longer hearing the cries of the dogs and men that he had just left behind, he stops, gazes round him, and seems to recover his natural tranquillity. But this calm is of short duration, for his inveterate pursuers slowly and securely trace him along, and he once more hears the approaching destruction from behind. He again, therefore, renews his efforts to escape, and again leaves his pursuers at almost the former distance; but this second effort makes him more feeble than before, and when they come up a second time, he is unable to outstrip them with equal velocity. The poor animal now, therefore, is obliged to have recourse to all his little arts of escape, which sometimes though but seldom, avail him. In proportion as his strength fails him, the ardour of his pursuers is inflamed; he tracks more heavily on the ground, and this increasing the strength of the scent, redoubles the cries of the hounds, and enforces their speed. It is then that the stag seeks refuge among the herd, and tries every artifice to put off some other head for his own. Sometimes he will send forth some little deer in his stead, in the mean time lying close himself that the hounds may overshoot him. He will break into one thicket after another to find deer, rousing them, gathering them together, and endeavouring to put them upon the tracks he has made. His old companions, however, with a true spirit of ingratitude, now all forsake and shun him with the most watchful industry, leaving the unhappy creature to take his fate by himself. Thus abandoned of his fellows, he again tries other arts, by doubling and crossing in some hard-beaten high-

way, where the scent is least perceivable. He now also runs against the wind, not only to cool himself, but the better to hear the voice and judge of the distance of his implacable pursuers. It is now easily perceivable how sorely he is pressed by his manner of running, which, from the bounding easy pace with which he began, is converted into a stiff and short manner of going; his mouth also is black and dry, without foam on it; his tongue hangs out; and the tears, as some say, are seen starting from his eyes. His last refuge, when every other method of safety has failed him, is to take the water, and to attempt an escape by crossing whatever lake or river he happens to approach. While swimming, he takes all possible care to keep in the middle of the stream, lest by touching the bough of a tree, or the herbage on the banks he may give scent to the hounds. He is also ever found to swim against the stream; whence the huntsmen have made it into a kind of proverb, *That he that would his chase find, must up with the river and down with the wind.* On this occasion too he will often cover himself under water, so as to show nothing but the tip of his nose. Every resource and every art being at length exhausted, the poor creature tries the last remains of his strength, by boldly opposing those enemies he cannot escape; he therefore faces the dogs and men, threatens with his horns, guards himself on every side, and for some time stands at bay. In this manner quite desperate, he furiously aims at the first dog or man that approaches; and it often happens that he does not die unrevenged. At that time the more prudent, both of the dogs and men, seem willing to avoid him; but the whole pack quickly coming up he is soon surrounded and brought down, and the huntsman winds a *treble mort*, as it is called, with his horn.

Such is the manner of pursuing this animal in

England; but every country has a peculiar method of its own, adapted either to the nature of the climate, or the face of the soil. The ancient manner was very different from that practised at present; they used their dogs only to find out the game, but not to rouse it. Hence they were not curious as to the music of their hounds, or the composition of their pack; the dog that opened before he had discovered his game, was held in no estimation. It was their usual manner silently to find out the animal's retreat, and surround it with nets and engines, then to drive him up with all their cries ,and thus force him into the toils which they had previously prepared.

In succeeding times the fashion seemed to alter; and particularly in Sicily, the manner of hunting was as follows.* The nobles and gentry being informed which way a herd of deer passed, gave notice to one another, and appointed a day of hunting. For this purpose, every one was to bring a cross-bow, or a long-bow, and a bundle of staves, shod with iron, the heads bored, with a cord passing through them all. Thus provided, they came to where the herd continued grazing, and casting themselves about in a large ring, surrounded the deer on every side. Then each taking his stand, unbound his faggot, set up his stake, and tied the end of the chord to that of his next neighbour, at the distance of about ten feet one from the other. Between each of these stakes was hung a bunch of crimson feathers, and so disposed, that with the least breath of wind they would whirl round, and preserve a sort of fluttering motion. This done, the persons who set up the staves withdrew, and hid themselves in the neighbouring coverts; then the chief huntsman, entering with his hounds within the lines, roused the game with a full cry. The deer, frighted, and flying on all

* Pier. Hieroglyph. lib. vii, cap. 6.

sides, upon approaching the lines were scared away by the fluttering of the feathers, and wandered about within this artificial paling, still awed by the shining and fluttering plumage that encircled their retreat: the huntsman, however, still pursuing, and calling every person by name as he passed by their stand, commanded him to shoot the first, third, or sixth, as he pleased; and if any of them missed, or singled out another than that assigned him, it was considered as a most shameful mischance. In this manner, however, the whole herd was at last destroyed; and the day concluded with mirth and feasting.

The stags of China are of a particular kind, for they are no taller than a common house dog; and hunting them is one of the principal diversions of the great. Their flesh, while young, is exceedingly good; but when they arrive at maturity, it begins to grow hard and tough: however, the tongue, the muzzle, and the ears, are in particular esteem among that luxurious people. Their manner of taking them is singular enough: They carry with them the heads of some of the females stuffed, and learn exactly to imitate their cry: upon this the male does not fail to appear, and looking on all sides perceives the head, which is all that the hunter, who is himself concealed, discovers. Upon his nearer approach, the whole company rise, surround, and often take him alive.

There are very few varieties in the red deer of this country, and they are mostly found of the same size and colour. But it is otherwise in different parts of the world, where they are seen to differ in form, in size, in horns, and in colour.

The stag of Corsica is a very small animal, being not above half the size of those common among us. His body is short and thick, his legs short, and his hair of a dark brown.

There is, in the forests of Germany, a kind of stag, named by the ancients the *Tragelaphus*, and which the natives call the *Bran Deer*, or the *Brown Deer*. This is of a darker colour than the common stag, of a lighter shade upon the belly, long hair upon the neck and throat, by which it appears bearded, like the goat.

There is also a very beautiful stag, which by some is said to be a native of Sardinia, but others (among whom is M. Buffon) are of opinion that it comes from Africa or the East Indies. He calls it the *Axis*, after Pliny; and considers it as making the shade between the stag and the fallow-deer. The horns of the axis are round, like those of the stag; but the form of its body entirely resembles that of the buck, and the size also is exactly the same. The hair is of four colours; namely, fallow, white, black, and gray. The white is predominant under the belly, on the inside of the thighs and the legs. Along the back there are two rows of spots in a right line; but those on other parts of the body are very irregular. A white line runs along each side of this animal, while the head and neck are gray. The tail is black above and white beneath, and the hair upon it is six inches long.

Although there are but few individuals of the deer kind, yet the race seems diffused over all parts of the earth. The new continent of America, in which neither the sheep, the goat, nor the gazelle, have been originally bred, nevertheless produces stags, and other animals of the deer kind, in sufficient plenty. The Mexicans have a breed of white stags in their parks, which they call *Stags Royal*.* The stags of Canada differ from ours in nothing except the size of the horns, which in them is greater; and the direction of the antlers, which rather turn back than project forward, as in those of Europe. The

* Buffon, vol. xiii, p. 35.

same difference of size that obtains among our stags is also to be seen in that country; and, as we are informed by Ruysch, the Americans have brought them into the same state of domestic tameness that we have our sheep, goats, or black cattle. They send them forth in the day-time to feed in the forests, and at night they return home with the herdsman who guards them. The inhabitants have no other milk but what the hind produces, and use no other cheese but what is made from thence. In this manner we find, that an animal which seems made only for man's amusement, may be easily brought to supply his necessities. Nature has many stores of happiness and plenty in reserve, which only want the call of industry to be produced, and now remain as candidates for human approbation.

THE FALLOW-DEER.

No two animals can be more nearly allied than the stag and the fallow-deer.* Alike in form, alike in disposition, in the superb furniture of their heads, in their swiftness and timidity; and yet no two animals keep more distinct, or avoid each other with more fixed animosity. They are never seen to herd in the same place, they never engender together, or form a mixed breed; and even in those countries where the stag is common, the buck seems to be entirely a stranger. In short, they both form distinct families; which, though so seemingly near, are still remote; and although with the same habitudes, yet retain an unalterable aversion.

The fallow-deer, as they are much smaller, so they seem of a nature less robust, and less savage than

* Buffon, vol. xxii, p. 36.

those of the stag kind. They are found but rarely wild in the forests; they are, in general, bred up in parks, and kept for the purposes of hunting, or of luxury, their flesh being preferred to that of any other animal. It need scarcely be mentioned, that the horns of the buck make its principal distinction, being broad and palmated, whereas those of the stag are in every part round. In the one, they are flatted and spread like the palm of the hand; in the other they grow like a tree, every branch being of the shape of the stem that bears it. The fallow-deer also has the tail longer, and the hair lighter than the stag; in other respects, they pretty nearly resemble one another.*

The head of the buck, as of all other animals of this kind, is shed every year, and takes the usual time for repairing. The only difference between it and the stag is, that this change happens later in the buck; and its rutting time, consequently, falls more into the winter. It is not found so furious at this season as the former, nor does it so much exhaust itself by the violence of its ardour. It does not quit its natural pastures in quest of the female, nor does it attack other animals with indiscriminate ferocity; however, the males combat for the female among each other, and it is not without many

contests, that one buck is seen to become master of the whole herd.

It often happens, also, that a herd of fallow deer is seen to divide into two parties, and engage each other with great ardour and obstinacy.* They both seem desirous of gaining some favourite spot of the park for pasture, and of driving the vanquished party into the coarser and more disagreeable parts. Each of these factions has its particular chief; namely, the two oldest and strongest of the herd. These lead on to the engagement, and the rest follow under their direction. These combats are singular enough, from the disposition and conduct which seem to regulate their mutual efforts. They attack with order, and support the assault with courage; they come to each other's assistance, they retire, they rally, and never give up the victory upon a single defeat. The combat is renewed for several days together; until at length the most feeble side is obliged to give way, and is content to escape to the most disagreeable part of the park, where only they can find safety and protection.

The fallow-deer is easily tamed, and feeds upon many things which the stag refuses. By this means it preserves its venison better; and even after rutting it does not appear entirely exhausted. It continues almost in the same state through the whole year, although there are particular seasons when its flesh is chiefly in esteem. This animal also browzes closer than the stag; for which reason it is more prejudicial among young trees, which it often strips too close for recovery. The young deer eat much faster and more greedily than the old; they seek the female at their second year, and, like the stag, are fond of variety. The doe goes with young above eight months, like the hind, and commonly brings

* Buffon, vol. xii, p. 36.

forth one at a time; but they differ in this, that the buck comes to perfection at three, and lives till sixteen, whereas the stag does not come to perfection till seven, and lives till forty.

As this animal is a beast of chase, like the stag, so the hunters have invented a number of names relative to him. The buck is the first year called a *fawn;* the second, a *pricket;* the third, a *sorel;* the fourth a *sore;* the fifth, a *buck of the first head;* and the sixth, a *great buck:* the female is called a *doe:* the first year a *fawn;* and the second a *tegg*. The manner of hunting the buck is pretty much the same as that of stag-hunting, except that less skill is required in the latter. The buck is more easily roused; it is sufficient to judge by the view, and mark what grove or covert it enters, as it is not known to wander far from thence, nor like the stag, to change its *layer*, or place of repose. When hard hunted, it takes to some stronghold or covert with which it is acquainted, in the more gloomy parts of the wood, or the steeps of the mountain; not like the stag, flying before the hounds, nor crossing nor doubling, nor using any of the subtleties which the stag is accustomed to. It will take the water when sorely pressed, but seldom a great river; nor can it swim so long, nor so swiftly, as the former. In general, the strength, the cunning, and the courage of this animal, are inferior to those of the stag; and consequently, it affords neither so long, so various, nor so obstinate a chase: besides, being lighter, and not tracking so deeply, it leaves a less powerful and lasting scent, and the dogs in the pursuit are more frequently at a fault.

As the buck is a more delicate animal than the stag, so also it is subject to greater varieties.* We have in England two varieties of the fallow-deer,

* British Zoology.

which are said to be of foreign origin: the beautiful spotted kind, which is supposed to have been brought from Bengal; and the very deep brown sort, that are now so common in several parts of this kingdom. These were introduced by King James the First from Norway; for, having observed their hardiness and that they could endure the winter, even in that severe climate, without fodder, he brought over some of them into Scotland, and disposed of them among his chases. Since that time they have multiplied in many parts of the British empire; and England is now become more famous for its venison than any other country in the world. Whatever pains the French have taken to rival us in this particular, the flesh of their fallow-deer, of which they keep but a few, has neither the fatness nor the flavour of that fed upon English pasture.

However, there is scarcely a country in Europe, except far to the northward, in which this animal is a stranger. The Spanish fallow-deer are as large as stags, but of a darker colour, and a more slender neck: their tails are longer than those of ours; they are black above, and white below. The Virginian deer are larger and stronger than ours, with great necks, and their colour inclinable to gray. Other kinds have the hoofs of their hind legs marked outwardly with a white spot; and their ears and tails much longer than the common. One of these has been seen full of white spots, with a black list down the middle of his back. In Guiana, a country of south America, according to Labat, there are deer without horns, which are much less than those of Europe, but resembling them in every other particular. They are very lively, light of course, and excessively fearful; their hair is of a reddish fallow, their heads are small and lean, their ears little, their necks long and arched, the tail short, and

the sight piercing. When pursued, they fly into places where no other animal can follow them. The Negroes who pursue them, stand to watch for them in narrow paths, which lead to the brook or the meadow where they feed; there waiting in the utmost silence, (for the slightest sounds will drive them away,) the Negro, when he perceives the animal within reach, shoots, and is happy if he can bring down his game. Their flesh, though seldom fat, is considered as a great delicacy, and the hunter is well rewarded for his trouble.

THE ROEBUCK.

THE Roebuck is the smallest of the deer kind known in our climate, and is now almost extinct among us, except in some parts of the highlands of Scotland. It is generally about three feet long, and about two feet high. The horns are from eight to nine inches long, upright, round, and divided into only three branches. The body is covered with very long hair, well adapted to the rigour of its mountainous abode. The lower part of each hair is ash colour; near the ends is a narrow bar of black, and the points are yellow. The hairs on the face are black, tipped with ash colour. The ears are long, their insides of a pale yellow, and covered with long hair. The spaces bordering on the eyes and mouth are black. The chest, belly, and legs, and the inside of the thighs, are of a yellowish-white; the rump is of a pure white, and the tail very short. The make of this little animal is very elegant, and its swiftness equals its beauty. It differs from the fallow-deer in having round horns, and not flatted like theirs. It differs from the stag, in its smaller

size, and the proportionable paucity of its antlers; and it differs from all of the goat kind, as it annually sheds its head, and obtains a new one, which none of that kind are ever seen to do.

As the stag frequents the thickest forests, and the sides of the highest mountains, the roebuck with humbler ambition, courts the shady thicket, and the rising slope. Although less in size, and far inferior in strength to the stag, it is yet more beautiful, more active, and even more courageous: its hair is always smooth, clean, and glossy; and it frequents only the driest places, and of the purest air. Though but a very little animal, as we have already observed, yet when its young is attacked, it faces even the stag himself, and often comes off victorious.* All its motions are elegant and easy; it bounds without effort, and continues the course with but little fatigue. It is also possessed of more cunning in avoiding the hunter, is more difficult to pursue, and, although its scent is much stronger than that of the stag, it is more frequently found to make a good retreat. It is not with the roebuck as with the stag, who never offers to use art until his strength is beginning to decline; this more cunning animal, when it finds that its first efforts to escape are without success, returns upon its former track, again goes forward, and again returns, until by its various windings it has entirely confounded the scent, and joined the last emanations to those of its former course. It then, by a bound, goes to one side, lies flat upon its belly, and permits the pack to pass by very near without offering to stir.

But the roebuck differs not only from the stag in superior cunning, but also in its natural appetites, its inclinations, and its whole habits of living. Instead of herding together, these animals live in se-

* Buffon, vol. xii, p. 75.

parate families; the sire, the dam, and the young ones associate together, and never admit a stranger into their little community. All others of the deer kind are inconstant in their affection; but the roebuck never leaves its mate; and as they have been generally bred up together from their first fawning, they conceive so strong an attachment, the male for the female, that they never after separate. Their rutting season continues but fifteen days, from the latter end of October to about the middle of November. They are not at that time, like the stag, overloaded with fat; they have not that strong odour which is perceived in all others of the deer kind; they have none of those furious excesses; nothing, in short, that alters their state; they only drive away their fawns upon these occasions, the buck forcing them to retire, in order to make room for a succeeding progeny: however, when the copulating season is over, the fawns return to their does, and remain with them some time longer; after which they quit them entirely, in order to begin an independent family of their own. The female goes with young but five months and a half; which alone serves to distinguish this animal from all others of the deer kind, that continue pregnant more than eight. In this respect, she rather approaches more nearly to the goat kind; from which, however, this race is separated by the male's annually casting its horns.

When the female is ready to bring forth, she seeks a retreat in the thickest part of the woods, being not less apprehensive of the buck, from whom she then separates, than of the wolf, the wild cat, and almost every ravenous animal of the forest: she generally produces two at a time, and three but very rarely. In about ten or twelve days these are able to follow their dam, except in cases of warm pursuit, when their strength is not equal to the fatigue. Upon

such occasions, the tenderness of the dam is very extraordinary; leaving them in the deepest thickets, she offers herself to the danger, flies before the hounds, and does all in her power to lead them from the retreat where she has lodged her little ones. Such animals as are nearly upon her own level she boldly encounters; attacks the stag, the wild cat, and even the wolf; and while she has life, continues her efforts to protect her young. Yet all her endeavours are often vain; about the month of May, which is her fawning time, there is a greater destruction among those animals than at any other season of the year. Numbers of the fawns are taken alive by the peasants; numbers are found out and worried by the dogs, and still more by the wolf, which has always been their most inveterate enemy. By these continual depredations upon this beautiful creature, the roebuck is every day becoming scarcer, and the whole race in many countries is wholly worn out. They were once common in England: the huntsmen, who characterized only such beasts as they knew, have given names to the different kinds and ages, as to the stag: thus they called it the first year, a *hind;* the second, a *gyrle;* and the third, a *hemuse;* but these names at present are utterly useless, since the animal no longer exists among us. Even in France, where it was once extremely common, it is now confined to a few provinces; and it is probable that in an age or two the whole breed will be utterly extirpated. M. Buffon indeed observes, that in those districts where it is mostly found, it seems to maintain its usual plenty, and that the balance between its destruction and increase is held pretty even; however, the number in general is known to decrease, for wherever cultivation takes place, the beasts of nature are known to retire. Many animals that once flourished in the world may now be extinct; and the

descriptions of Aristotle and Pliny, though taken from life, may be considered as fabulous, as their archetypes are no longer existing.

The fawns continue to follow the deer eight or nine months in all; and upon separating, their horns begin to appear, simple and without antlers the first year, as in those of the stag kind.* These they shed at the latter end of autumn, and renew during the winter; differing in this from the stag, who sheds them in spring, and renews them in summer. When the roebuck's head is completely furnished, it rubs the horns against trees in the manner of the stag, and thus strips them of the rough skin and the blood vessels, which no longer contribute to their nourishment and growth. When these fall, and new ones begin to appear, the roebuck does not retire as the stag to the covert of the wood, but continues its usual haunts, only keeping down its head to avoid striking its horns against the branches of trees, the pain of which it seems to feel with exquisite sensibility. The stag, who sheds his horns in summer, is obliged to seek a retreat from the flies, that at that time greatly incommode him; but the roebuck, who sheds them in winter, is under no such necessity; and, consequently, does not separate from its little family, but keeps with the female all the year round.†

As the growth of the roebuck, and its arrival at maturity, is much speedier than that of the stag, so its life is proportionably shorter. It seldom is found to extend above twelve or fifteen years; and if kept tame, it does not live above six or seven. It is an animal of a very delicate constitution, requiring variety of food, air, and exercise. It must be paired with a female, and kept in a park of at least a hundred acres. They may easily be subdued, but

* Buffon, vol. xii, p. 88. † *Ibid.*

never thoroughly tamed. No arts can teach them to be familiar with the feeder, much less attached to him. They still pseserve a part of their natural wildness, and are subject to terrors without a cause. They sometimes, in attempting to escape, strike themselves with such force against the walls of their enclosure, that they break their limbs, and become utterly disabled. Whatever care is taken to tame them, they are never entirely to be relied on, as they have capricious fits of fierceness, and sometimes strike at those they dislike with a degree of force that is very dangerous.

The cry of the roebuck is neither so loud nor so frequent as that of the stag. The young ones have a particular manner of calling to the dam, which the hunters easily imitate, and often thus allure the female to her destruction. Upon some occasions also they become in a manner intoxicated with their food, which, during the spring, is said to ferment in their stomachs, and they are then very easily taken. In summer they keep close under covert of the forest, and seldom venture out, except in violent heats, to drink at some river or fountain. In general, however, they are contented to slake their thirst with the dew that falls on the grass and the leaves of trees, and seldom risk their safety to satisfy their appetite. They delight chiefly in hilly grounds, preferring the tender branches and buds of trees to corn, or other vegetables; and it is universally allowed that the flesh of those between one and two years old is the greatest delicacy that is known. Perhaps, also, the scarceness of it enhances its flavour.

In America this animal is much more common than in Europe. With us there are but two known varieties; the red, which is the larger sort; and the brown, with a spot behind, which is less. But in the new continent the breed is extremely numerous,

and the varieties in equal proportion. In Louisiana, where they are extremely common, they are much larger than in Europe; and the inhabitants live in a great measure upon its flesh, which tastes like mutton when well fatted. They are found also in Brazil, where they have the name of *Cugacu Apara*, only differing from ours in some slight deviations in the horns. This animal is also said to be common in China; although such as have described it seem to confound it with the musk-goat, which is of a quite different nature.

THE ELK.

We have hitherto been describing minute animals in comparison of the Elk, the size of which, from concurrent testimony, appears to be equal to that of the elephant itself. It is an animal rather of the buck than the stag kind, as its horns are flatted towards the top; but it is far beyond both in stature, some of them being known to be above ten feet high. It is a native both of the old and new continent, being known in Europe under the name of the Elk, and in America by that of the Moose-deer. It is sometimes taken in the German and Russian forests, although seldom appearing; but it is extremely common in North America, where the natives pursue and track it in the snow. The accounts of this animal are extremely various; some describing it as being no higher than a horse, and others above twelve feet high.

As the stature of this creature makes its chief peculiarity, so it were to be wished that we could come to some precision upon that head. If we were to judge of its size by the horns which are some-

1. *Hippopotamus* — 2. *Rein Deer* — 3. *Elk.*

times fortuitously dug up in many parts of Ireland, we should not be much amiss in ascribing them to an animal at least ten feet high. One of these I have seen, which was ten feet nine inches from one tip to the other. From such dimensions, it is easy to perceive that it required an animal far beyond the size of a horse to support them. To bear a head with such extensive and heavy antlers, required no small degree of strength; and without all doubt, the bulk of the body must have been proportionable to the size of the horns. I remember some years ago to have seen a small moose-dear, which was brought from America by a gentleman of Ireland; it was about the size of a horse, and the horns were very little larger than those of a common stag: this, therefore, serves to prove that the horns bear an exact proportion to the animal's size. The small elk has but small horns; whereas those enormous ones which we have described above, must have belonged to a proportionable creature. In all the more noble animals, nature observes a perfect symmetry: and it is not to be supposed that she fails in this single instance. We have no reason, therefore, to doubt the accounts of Jocelyn and Dudley, who affirm that they have been found fourteen spans, which, at nine inches to a span, makes the animal almost eleven feet high. Others have extended their accounts to twelve and fourteen feet, which makes this creature one of the most formidable of the forest.

There is but very little difference between the European elk, and the American moose-deer, as they are but varieties of the same animal. It may be rather larger in America than with us, as in the forests of that unpeopled country it receives less disturbance than in our own. In all places, however, it is timorous and gentle, content with its pasture,

and never willing to disturb any other animal, when supplied itself.

The European elk grows to about seven or eight feet high. In the year 1742 there was a female of this animal shown at Paris, which was caught in a forest of Red Russia, belonging to the cham of Tartary:* it was then but young, and its height was even at that time six feet seven inches; but the describer observes, that it has since become much taller and thicker; so that we may suppose this female at least seven feet high. There have been no late opportunities of seeing the male; but by the rule of proportion, we may estimate his size at eight or nine feet at the least, which is about twice as high as an ordinary horse. The height, however, of the female, which was measured, was but six feet seven inches Paris measure, or almost seven English feet high. It was ten feet from the tip of the nose to the insertion of the tail, and eight feet round the body. The hair was very long and coarse, like that of a wild boar. The ears resembled those of a mule, and were a foot and a half long. The upper jaw was longer by six inches than the lower; and like other ruminating animals, it had no teeth, (cutting teeth I suppose the describer means.) It had a large beard under the throat, like a goat; and in the middle of the forehead, between the horns, there was a bone as large as an egg. The nostrils were four inches long on each side of the mouth. It made use of its fore-feet as a defence against its enemies. Those who showed it asserted, that it ran with astonishing swiftness; and that it swam also with equal expedition, and was very fond of the water. They gave it thirty pounds of bread every day, besides hay, and it drank eight buckets of water. It was tame and familiar, and submissive enough to its keeper.

* Dictionnare Raisonne des Animaux. Au nom, *Elan.*

This description differs in many circumstances from that which we have of the moose, or American elk, which the French call the *Original*. Of these there are two kinds; the common light gray moose, which is not very large; and the black moose, which grows to an enormous height. Mr. Dudley observes, that a doe or hind of the black moose kind, of the fourth year, wanted but an inch of seven feet high. All, however, of both kinds, have flat palmed horns, not unlike the fallow-deer, only that the palm is much larger, having a short trunk at the head, and then immediately spreading above a foot broad, with a kind of small antlers, like teeth, on one of the edges. In this particular all of the elk kind agree, as well the European elk, as the gray and the black moose-deer.

The gray moose-deer is about the size of a horse; and although it has large buttocks, its tail is not above an inch long. As in all of this kind the upper lip is much longer than the under, it is said that they continue to go backward as they feed. Their nostrils are so large that a man may thrust his hand in a considerable way; and their horns are as long as those of a stag, but, as was observed, much broader.

The black moose is the enormous animal mentioned above, from eight to twelve feet high. Jocelyn, who is the first English writer that mentions it, says, that it is a goodly creature, twelve feet high, with exceeding fair horns, that have broad palms, two fathoms from the top of one horn to another. He assures us that it is a creature, or rather a monster of superfluity, and many times bigger than an English ox. This account is confirmed by Dudley; but he does not give so great an expansion to the horns, measuring them only thirty-one inches between one tip and the other: however, that such an extraordinary animal as Jocelyn describes has ac-

tually existed, we can make no manner of doubt of, since there are horns common enough to be seen among us twelve feet from one tip to the other.

These animals delight in cold countries, feeding upon grass in summer, and the bark of trees in winter. When the whole country is deeply covered with snow, the moose-deer herd together under the tall pine trees, strip off the bark, and remain in that part of the forest while it yields them subsistence. It is at that time that the natives prepare to hunt them; and particularly when the sun begins to melt the snow by day, which is frozen again at night, for then the icy crust which covers the surface of the snow is too weak to support so great a bulk, and only retards the animal's motion. When the Indians, therefore, perceive a herd of these at a distance, they immediately prepare for their pursuit, which is not, as with us, the sport of an hour, but is attended with toil, difficulty, and danger.* The timorous animal no sooner observes its enemies approach, than it immediately endeavours to escape, but sinks at every step it takes. Still, however, it pursues its way through a thousand obstacles; the snow, which is usually four feet deep, yields to its weight, and embarrasses its speed; the sharp ice wounds its feet: and its lofty horns are entangled in the branches of the forest as it passes along. The trees, however, are broken

his lance with unerring aim, which sticks in the poor animal, and at first increases its efforts to escape. In this manner the moose trots heavily on,(for that is its usual pace,) till its pursuers once more come up, and repeat their blow; upon this, it again summons up sufficient vigour to get a-head; but at last, quite tired, and spent with loss of blood, it sinks, as the describer expresses it, like a ruined building, and makes the earth shake beneath its fall.

This animal when killed is a very valuable acquisition to the hunters; the flesh is very well tasted, and is said to be very nourishing. The hide is strong, and so thick that it has been often known to turn a musket-ball; however, it is soft and pliable, and when tanned the leather is extremely light, yet very lasting. The fur is a light gray in some, and blackish in others; and when viewed through a microscope, appears spongy like a bulrush, and is smaller at the roots and points than in the middle: for this reason it lies very flat and smooth, and though beaten or abused never so much, it always returns to its former state. The horns also are not less useful, being applied to all the purposes for which hartshorn is beneficial: these are different in different animals: in some they resemble entirely those of the European elk, which spread into a broad palm, with small antlers on one of the edges; in others they have a branched brow-antler between the bur and the palm, which the German elk has not; and in this they entirely agree with those whose horns are so frequently dug up in Ireland. This animal is said to be troubled with the epilepsy, as it is often found to fall down when pursued, and thus becomes an easier prey: for this reason an imaginary virtue has been ascribed to the hinder hoof, which some have supposed to be a specific against all epileptic disorders. This, however, may be considered as a vulgar error,

as well as that of its curing itself of this disorder by applying the hinder hoof behind the ear. After all, this animal is but very indifferently and confusedly described by travellers; each mixing his account with something false or trivial, often mistaking some other quadruped for the elk, and confounding its history. Thus, some have mistaken it for the rein-deer, which in every thing but size it greatly resembles; some have supposed it to be the same with the Tapurette,* from which it entirely differs; some have described it as the common red American stag, which scarcely differs from our own; and, lastly, some have confounded it with the Bubalus, which is more properly a gazelle of Africa.†

THE REIN-DEER.

Of all animals of the deer kind, the Rein-deer is the most extraordinary and the most useful. It is a native of the icy regions of the north; and though many attempts have been made to accustom it to a more southern climate, it shortly feels the influence of the change, and in a few months declines and dies. Nature seems to have fitted it entirely to answer the necessities of that hardy race of mankind that live near the pole. As these would find it impossible to subsist among their barren snowy mountains without its aid, so this animal can live only there, where its assistance is most absolutely necessary. From it alone the natives of Lapland and Greenland supply most of their wants; it answers the purposes of a horse, to convey them and their scanty furniture from one mountain to another; it answers the purposes of a cow, in giving milk; and

* Condamine. † Dapper, Description de l'Afrique, p. 17.

it answers the purposes of the sheep, in furnishing them with a warm, though a homely kind of clothing. From this quadruped alone, therefore, they receive as many advantages as we derive from three of our most useful creatures; so that Providence does not leave these poor outcasts entirely destitute, but gives them a faithful domestic, more patient and serviceable than any other in nature.

The rein-deer resembles the American elk in the fashion of its horns. It is not easy in words to describe these minute differences; nor will the reader, perhaps, have a distinct idea of the similitude, when told that both have brow-antlers, very large, and hanging over their eyes, palmated towards the top, and bending forward, like a bow. But here the similitude between these two animals ends; for as the elk is much larger than the stag, so the rein-deer is much smaller. It is lower and stronger built than the stag; its legs are shorter and thicker, and its hoofs much broader than in that animal; its hair is much thicker and warmer; its horns much larger in proportion, and branching forward over its eyes; its ears are much larger; its pace is rather a trot than a bounding, and this it can continue for a whole day; its hoofs are cloven and moveable, so that it spreads them abroad as it goes, to prevent its sinking in the snow. When it proceeds on a journey, it lays its great horns on its back, while there are two branches which always hang over its forehead, and almost cover its face. One thing seems peculiar to this animal and the elk, which is, that as they move along, their hoofs are heard to crack with a pretty loud noise. This arises from their manner of treading; for as they rest upon their cloven hoof, it spreads on the ground, and the two divisions separate from each other; but when they lift it, the divisions close again, and strike against each other with a crack.

The female also of the rein-deer has horns as well as the male, by which the species is distinguished from all other animals of the deer kind whatsoever.

When the rein-deer first shed their coat of hair, they are brown; but in proportion as summer approaches, their hair begins to grow whitish, until at last they are nearly gray.* They are, however, always black about the eyes. The neck has long hair, hanging down, and coarser than upon any other part of the body. The feet, just at the insertion of the hoof, are surrounded with a ring of white. The hair in general stands so thick over the whole body, that if one should attempt to separate it, the skin will no where appear uncovered: whenever it falls also, it is not seen to drop from the root, as in other quadrupeds, but seems broken short near the bottom; so that the lower part of the hair is seen growing, while the upper falls away.

The horns of the female are made like those of the male, except that they are smaller and less branching. As in the rest of the deer kind, they sprout from the points; and also in the beginning are furnished with a hairy crust, which supports the blood-vessels, of most exquisite sensibility. The rein-deer shed their horns after rutting-time, at the latter end of November; and they are not completely furnished again till towards autumn. The female always retains hers till she brings forth, and then sheds them about the beginning of November. If she be barren, however, which is not unfrequently the case, she does not shed them till winter. The castration of the rein-deer does not prevent the shedding of their horns: those which are the strongest cast them early in winter; those which are more weakly not so soon.

* For the greatest part of this description of the rein-deer, I am obliged to M. Hoffberg; upon whose authority, being a native of Sweden, and an experienced naturalist, we may confidently rely.

Thus, from all these circumstances, we see how greatly this animal differs from the common stag. The female of the rein-deer has horns, which the hind is never seen to have; the rein-deer, when castrated, renews its horns, which we are assured the stag never does: it differs not less in its habits and manner of living, being tame, submissive, and patient, while the stag is wild, capricious, and unmanageable.

The rein-deer, as was said, is naturally an inhabitant of the countries bordering on the artic circle. It is not unknown to the natives of Siberia. The North Americans also hunt it, under the name of the *Caribou*. But in Lapland, this animal is converted to the utmost advantage; and some herdsmen of that country are known to possess above a thousand in a single herd.

Lapland is divided into two districts, the mountainous and the woody. The mountainous part of the country is at best barren and bleak, excessively cold, and uninhabitable during the winter; still, however it is the most desirable part of this frightful region, and is most thickly peopled during the summer. The natives generally reside on the declivity of the mountains, three or four cottages together, and lead a cheerful and social life. Upon the approach of winter they are obliged to migrate into the plains below, each bringing down his whole herd, which often amounts to more than a thousand, and leading them where the pasture is in greatest plenty. The woody part of the country is much more desolate and hideous. The whole face of nature there presents a frightful scene of trees without fruit, and plains without verdure. As far as the eye can reach, nothing is to be seen, even in the midst of summer, but barren fields, covered only with a moss almost as white as snow: no grass, no flowery landscapes,

only here and there a pine tree, which may have escaped the frequent conflagrations by which the natives burn down their forests. But what is very extraordinary, as the whole surface of the country is clothed in white, so, on the contrary, the forests seem to the last degree, dark and gloomy. While one kind of moss makes the fields look as if they were covered with snow, another kind blackens over all the trees, and even hides their verdure. This moss, however, which deforms the country, serves for its only support, as upon it alone the rein-deer can subsist. The inhabitants, who, during the summer, lived among the mountains, drive down their herds in winter, and people the plains and woods below. Such of the Laplanders as inhabit the woods and the plains all the year round, live remote from each other, and having been used to solitude, are melancholy, ignorant, and helpless. They are much poorer also than the mountaineers, for, while one of those is found to possess a thousand rein-deer at a time, none of these are ever known to rear the tenth part of that number. The rein-deer makes the riches of this people; and the cold mountainous parts of the country agree best with its constitution. It is for this reason, therefore, that the mountains of Lapland are preferred to the woods; and that many claim an exclusive right to the tops of hills, covered in almost eternal snow.

As soon as the summer begins to appear, the Laplander, who had fed his rein-deer upon the lower grounds during the winter, then drives them up to the mountains, and leaves the woody country, and the low pasture, which at that season are truly deplorable. The gnats, bred by the sun's heat in the marshy bottoms and the weedy lakes, with which the country abounds more than any other part of the world, are all upon the wing, and fill the whole

air, like clouds of dust in a dry windy day. The inhabitants, at that time, are obliged to daub their faces with pitch, mixed with milk, to shield their skins from their depredations. All places are then so greatly infested, that the poor natives can scarcely open their mouths without fear of suffocation: the insects enter, from their numbers and minuteness, into the nostrils and the eyes, and do not leave the sufferer a moment at his ease. But they are chiefly enemies to the rein-deer: the horns of that animal being then in their tender state, and possessed of extreme sensibility, a famished cloud of insects instantly settle upon them, and drive the poor animal almost to distraction. In this extremity, there are but two remedies, to which the quadruped, as well as its master, are obliged to have recourse. The one is, for both to take shelter near their cottage, where a large fire of tree moss is prepared, which filling the whole place with smoke, keeps off the gnat, and thus, by one inconvenience, expels a greater: the other is, to ascend to the highest summit of the mountains, where the air is too thin, and the weather too cold for the gnats to come. There the rein-deer are seen to continue the whole day, although without food, rather than to venture down into the lower parts, where they can have no defence against their unceasing persecutors.—Besides the gnat, there is also a gadfly, that, during the summer season, is no less formidable to them. This insect is bred under their skins, where the egg has been deposited the preceding summer; and it is no sooner produced as a fly, than it again endeavours to deposit its eggs in some place similar to that from whence it came. Whenever, therefore, it appears flying over a herd of rein-deer, it puts the whole body, how numerous soever, into motion; they know their enemy, and do all they can, by tossing their horns, and running

among each other, to terrify or avoid it. All their endeavours, however, are too generally without effect; the gadfly is seen to deposit its eggs, which burrowing under the skin, wound it in several places, and often bring on an incurable disorder. In the morning, therefore, as soon as the Lapland herdsman drives his deer to pasture, his greatest care is to keep them from scaling the summits of the mountains where there is no food, but where they go merely to be at ease from the gnats and gadflies that are ever annoying them. At this time there is a strong contest between the dogs and the deer; the one endeavouring to climb up against the side of the hill, and to gain those summits that are covered in eternal snows; the other forcing them down, by barking and threatening, and in a manner compelling them into the places where their food is in the greatest plenty. There the men and dogs confine them, guarding them with the utmost precaution the whole day, and driving them home at the proper seasons for milking.

The female brings forth in the middle of May, and gives milk till about the middle of October. Every morning and evening, during the summer, the herdsman returns to the cottage with his deer to be milked, where the women previously have kindled up a smoky fire, which effectually drives off the gnats, and keeps the rein-deer quiet while milking. The female furnishes about a pint, which, though thinner than that of the cow, is nevertheless sweeter and more nourishing. This done, the herdsman drives them back to pasture: he neither folds nor houses them, neither provides for their subsistence during the winter, nor improves their pasture by cultivation.

Upon the return of the winter, when the gnats and flies are no longer to be feared, the Laplander

descends into the lower grounds; and as there are but few to dispute the possession of that desolate country, he has an extensive range to feed them in. Their chief, and almost their only food at that time, is the white moss already mentioned, which, from its being fed upon by this animal, obtains the name of the *Lichen rangiferinus*. This is of two kinds: the woody lichen, which covers almost all the desert parts of the country like snow; the other is black, and covers the branches of the trees in very great quantities. However unpleasing these may be to the spectator, the native esteems them as one of his choicest benefits, and the most indulgent gift of nature. While his fields are clothed with moss, he envies neither the fertility nor the verdure of the more southern landscape: dressed up warmly in his deer-skin clothes, with shoes and gloves of the same materials, he drives his herds along the desert, fearless and at ease, ignorant of any higher luxury than what their milk and smoke-dried flesh afford him. Hardened to the climate, he sleeps in the midst of ice; or awaking, dozes away his time with tobacco, while his faithful dogs supply his place, and keep the herd from wandering. The deer, in the mean time, with instincts adapted to the soil, pursue their food, though covered in the deepest snow. They turn it up with their noses like swine; and even though its surface be frozen and stiff, yet the hide is so hardened in that part, that they easily overcome the difficulty. It sometimes, however, happens, though but rarely, that the winter commences with rain, and a frost ensuing, covers the whole country with a glazed crust of ice. Then, indeed, both the rein-deer and the Laplander are undone; they have no provisions laid up in case of accident, and the only resource is to cut down the large pine trees that are covered with moss, which furnishes but a scanty

supply; so that the greatest part of the herd is then seen to perish without a possibility of assistance. It sometimes also happens that even this supply is wanting; for the Laplander often burns down his woods, in order to improve and fertilize the soil which produces the moss upon which he feeds his cattle.

In this manner the pastoral life is still continued near the pole: neither the coldness of the winter nor the length of the nights, neither the wildness of the forest, nor the vagrant disposition of the herd, interrupt the even tenor of the Laplander's life. By night and day he is seen attending his favourite cattle, and remains unaffected in a season which would be speedy death to those bred up in a milder climate. He gives himself no uneasiness to house his herds, or to provide a winter subsistence for them; he is at the trouble neither of manuring his grounds nor bringing in his harvests; he is not the hireling of another's luxury; all his labours are to obviate the necessities of his own situation, and these he undergoes with cheerfulness, as he is sure to enjoy the fruits of his own industry. If, therefore, we compare the Laplander with the peasant of more southern climates, we shall have little reason to pity his situation: the climate in which he lives is rather terrible to us than to him; and as for the rest, he is blessed with liberty, plenty, and ease. The rein-deer alone supplies him with all the wants of life, and some of the conveniences, serving to show how many advantages nature is capable of supplying when necessity gives the call. Thus, the poor little helpless native, who was originally, perhaps, driven by fear or famine into those inhospitable climates, would seem, at first view, to be the most wretched of mankind; but it is far otherwise: he looks round among the few wild animals that his barren country can maintain, and sin-

gles out one from among them, and that of a kind which the rest of mankind have not thought worth taking from a state of nature; this he cultivates, propagates, and multiplies, and from this alone derives every comfort that can soften the severity of his situation.

The rein-deer of this country are of two kinds, the wild and the tame. The wild are larger and stronger, but more mischievous than the others. Their breed, however, is preferred to that of the tame; and the female of the latter is often sent into the woods, from whence she returns home impregnated by one of the wild kind. These are fitter for drawing the sledge, to which the Laplander accustoms them betimes, and yokes them to it by a strap, which goes round the neck, and comes down between their legs. The sledge is extremely light, and shod at the bottom with the skin of a young deer, the hair turned to slide on the frozen snow. The person who sits on this guides the animal with a cord fastened round the horns, and encourages it to proceed with his voice, and drives it with a goad. Some of the wild breed, though by far the strongest, are yet found refractory, and often turn upon their drivers, who have then no other resource but to cover themselves with their sledge, and let the animal vent its fury upon that. But it is otherwise with those that are tame: no creature can be more active, patient, and willing; when hard pushed they will trot nine or ten Swedish Miles, or between fifty and sixty English miles at one stretch. Bnt in such a case the poor obedient creature fatigues itself to death, and if not prevented by the Laplander, who kills it immediately, it will die a day or two after. In general, they can go about thirty miles without halting, and this without any great or dangerous efforts. This, which is the only manner of travelling in that

country, can be performed only in winter, when the snow is glazed over with ice; and although it be a very speedy method of conveyance, yet it is inconvenient, dangerous, and troublesome.

In order to make these animals more obedient, and more generally serviceable, they castrate them; this operation the Laplanders perform with their teeth: these become sooner fat when taken from labour, and they are found to be stronger in drawing the sledge. There is usually one male left entire for every six females; these are in rut from the feast of St. Matthew to about Michaelmas. At this time their horns are thoroughly burnished, and their battles among each other are fierce and obstinate. The females do not begin to breed till they are two years old, and then they continue regularly breeding every year till they are superannuated. They go with young above eight months, and generally bring forth two at a time. The fondness of the dam for her young is very remarkable; it often happens that when they are separated from her, she will return from pasture, keep calling round the cottage for them, and will not desist until, dead or alive, they are brought and laid at her feet. They are at first of a light brown, but they become darker with age, and at last the old ones are of a brown almost approaching to blackness. The young follow the dam for two or three years; but they do not acquire their full growth until four. They are then broke in, and managed for drawing the sledge; and they continue serviceable for four or five years longer. They never live above fifteen or sixteen years; and when they arrive at the proper age, the Laplander generally kills them for the sake of their skins and their flesh. This he performs by striking them on the back of the neck with his knife into the spinal marrow, upon which they instantly fall, and he then cuts the arte-

ries that lead to the heart, and lets the blood discharge itself into the cavity of the breast.

There is scarcely any part of this animal that is not converted to its peculiar uses. As soon as it begins to grow old, and some time before the rut, it is killed and the flesh dried in the air. It is also sometimes hardened with smoke, and laid up for travelling provision, when the natives migrate from one part of the country to another. During the winter the rein-deer are slaughtered as sheep with us; and every four persons in the family are allowed one rein-deer for their week's subsistence. In spring they spare the herd as much as they can, and live upon fresh fish; in summer the milk and curd of the rein-deer makes their chief provision; and in autumn they live wholly upon fowls, which they kill with a cross-bow, or catch in springes. Nor is this so scanty an allowance, since at that time the sea-fowls come in such abundance that their ponds and springs are covered over. These are not so shy as with us, but yield themselves an easy prey. They are chiefly allured to those places by the swarms of gnats which infest the country during summer, and now repay the former inconveniences, by inviting such numbers of birds as supply the natives with food a fourth part of the year in great abundance.

The milk, when newly taken, is warmed in a cauldron, and thickened with renet, and then the curd is pressed into cheeses, which are little, and well tasted. These are never found to breed mites as the cheese of other countries, probably because the mite-fly is not to be found in Lapland. The whey which remains is warmed up again, and becomes of a consistence as if thickened with the white of eggs. Upon this the Laplanders feed during the summer; it is pleasant and well tasted, but not very nourishing. As to butter, they very seldom

make any, because the milk affords but a very small quantity, and this, both in taste and consistence, is more nearly resembling to suet. They never keep their milk till it turns sour; and do not dress it into the variety of dishes which the more southern countries are known to do. The only delicacy they make from it is with wood-sorrel, which being boiled up with it, and coagulating, the whole is put into casks or deer-skins, and kept under ground to be eaten in winter.

The skin is even a more valuable part of this animal than either of the former. From that part of it which covered the head and feet, they make their strong snow-shoes, with the hair on the outside. Of the other parts they compose their garments, which are extremely warm, and which cover them all over. The hair of these also is on the outside; and they sometimes line them with the fur of the glutton, or some other warm-furred animal of that climate. These skins also serve them for beds. They spread them on each side of the fire, upon some leaves of the dwarf birch tree, and in this manner lie both soft and warm. Many garments made of the skin of the rein-deer are sold every year to the inhabitants of the more southern parts of Europe; and they are found so serviceable in keeping out the cold, that even people of the first rank are known to wear them.

In short, no part of this animal is thrown away as useless. The blood is preserved in small casks to make sauce with the marrow in spring. The horns are sold to be converted into glue. The sinews are dried, and divided so as to make the strongest kind of sewing thread, not unlike catgut. The tongues, which are considered as a great delicacy, are dried, and sold into the more southern provinces. The intestines themselves are washed like our tripe, and in high esteem among the natives. Thus the Laplan-

der finds all his necessities amply supplied from this single animal; and he who has a large herd of these animals has no idea of higher luxury.

But although the rein-deer be a very hardy and vigorous animal, it is not without its diseases. I have already mentioned the pain it feels from the gnat, and the apprehensions it is under from the gad-fly. Its hide is often found pierced in a hundred places like a sieve from this insect, and not a few die in their third year from this very cause. Their teats also are subject to cracking, so that blood comes instead of milk. They sometimes take a loathing for their food, and instead of eating stand still and chew the cud. They are also troubled with a vertigo, like the elk, and turn round often till they die. The Laplander judges of their state by the manner of their turning: If they turn to the right, he judges their disorder but slight; if they turn to the left, he deems it incurable. The rein-deer are also subject to ulcers near the hoof, which unqualifies them for travelling, or keeping with the herd. But the most fatal disorder of all is that which the natives call the *suddataka*, which attacks this animal at all seasons of the year. The instant it is siezed with this disease, it begins to breathe with great difficulty, its eyes begin to stare, and its nostrils to expand. It acquires also an unusual degree of ferocity, and attacks all it meets indiscriminately. Still, however, it continues to feed as if in health, but is not seen to chew the cud, and it lies down more frequently than before. In this manner it continues, every day consuming, and growing more lean, till at last it dies from mere inanition; and not one of those that are attacked with this disorder are ever found to recover. Notwithstanding, it is but very lately known in that part of the world, although during the last ten or fifteen years it has spoiled whole provinces of this

necessary creature. It is contagious; and the moment the Laplander perceives any of his herd infected, he hastens to kill them immediately, before it spreads any farther. When examined internally, there is a frothy substance found in the brain, and round the lungs, the intestines are lax and flabby, and the spleen is diminished almost to nothing. The Laplander's only cure in all these disorders is to anoint the animal's back with tar; if this does not succeed, he considers the disease as beyond the power of art, and with his natural phlegm submits to the severities of fortune.

Besides the internal maladies of this animal, there are some external enemies which it has to fear. The bears now and then make depredations upon the herd; but, of all their persecutors, the creature called the *glutton* is the most dangerous, and the most successful. The war between these is carried on not less in Lapland than in North America, where the rein-deer is called the *caribou*, and the glutton the *carcajou*. This animal, which is not above the size of a badger, waits whole weeks together for its prey, hid in the branches of some spreading tree; and when the wild rein-deer passes underneath, it instantly drops down upon it, fixing its teeth and claws into the neck, just behind the horns. It is in vain that the wounded animal then flies for protection, that it rustles among the branches of the forest; the glutton still holds its former position; and although it often loses a part of its skin and flesh, which are rubbed off against the trees, yet it still keeps fast, until its prey drops with fatigue and loss of blood. The deer has but one only method of escape, which is by jumping into the water: that element its enemy cannot endure; for as we are told, it quits its hold immediately, and then thinks only of providing for its own proper security.

1. Wild Boar _ 2. Domestic Hog _ 3. Hog of Siam

CHAPTER XIV.

OF QUADRUPEDS OF THE HOG KIND.

ANIMALS of the hog kind seem to unite in themselves all those distinctions by which others are separated. They resemble those of the horse kind in the number of their teeth, which in all amount to forty-four, in the length of their head, and in having but a single stomach: they resemble the cow kind in their cloven hoofs and the position of their intestines, and they resemble those of the claw-footed kind in their appetite for flesh, in their not chewing the cud, and in their numerous progeny. Thus this species serves to fill up that chasm which is found between the carnivorous kinds and those that live upon grass; being possessed of the ravenous appetite of the one, and the inoffensive nature of the other. We may consider them, therefore, as of a middle nature, which we can refer neither to the rapacious nor the peaceful kinds, and yet partaking somewhat of the nature of both. Like the rapacious kinds, they are found to have short intestines; their hoofs also, though cloven to the sight, will, upon anatomical inspection, appear to be supplied with bones like beasts of prey; and the number of their teats also increase the similitude: on the other hand, in a natural state they live upon vegetables, and seldom seek after animal food except when urged by necessity. They offend no other animal of the forest, at the same time that they are furnished with arms to terrify the bravest.*

[* Quadrupeds of this kind have four cutting teeth in the upper jaw, whose points converge; and for the most part six in the lower jaw, which stand forwards: There are two tusks in each jaw, those in the upper jaw being short, while those of the under jaw are long, and ex-

The Wild Boar, which is the original of all the varieties we find in this creature, is by no means so stupid nor so filthy an animal as that we have reduced to tameness: he is much smaller than the tame hog, and does not vary in his colour as those of the domestic kind do, but is always found of an iron gray, inclining to black; his snout is much longer than that of the tame hog, and the ears are shorter, rounder, and black, of which colour are also the feet and the tail. He roots the ground in a different manner from the common hog; for as this turns up the earth in little spots here and there, so the wild boar ploughs it up like a furrow, and does irreparable damage in the cultivated lands of the farmer. The tusks also of this animal are larger than in the tame breed, some of them being seen almost a foot long.* These, as is well known, grow from both the under and upper jaw, bend upwards circularly, and are exceedingly sharp at the points. They differ from the tusks of the elephant in this, that they never fall; and it is remarkable of all the hog kind, that they never shed their teeth, as other animals are seen to do. The tusks of the lower jaw are always the most to be dreaded, and are found to give very terrible wounds.

The wild boar can properly be called neither a solitary nor a gregarious animal. The three first years the whole litter follows the sow, and the family lives in a herd together. They are then called beasts of company, and unite their common forces against the invasions of the wolf, or the more formidable beasts of prey. Upon this their principal safety while young depends; for when attacked they give each other mu-

tend out of the mouth. The snout is prominent, moveable, and has the appearance of having been cut off, or truncated. The feet are armed with divided or cloven hoofs.]

* Buffon, vol. ix, p. 147.

tual assistance, calling to each other with a very loud and fierce note: the strongest face the danger; they form a ring, and the weakest fall into the centre. In this position few ravenous beasts dare venture to attack them, but pursue the chase where there is less resistance and danger. However, when the wild boar is come to a state of maturity and when conscious of his own superior strength, he then walks the forest alone and fearless. At that time he dreads no single creature, nor does he turn out of his way even for man himself. He does not seek danger, and he does not much seem to avoid it.

This animal is therefore seldom attacked but at a disadvantage, either by numbers, or when found sleeping by moon-light. The hunting the wild boar is one of the principal amusements of the nobility in those countries where it is to be found. The dogs provided for this sport are of the slow heavy kind. Those used for hunting the stag or the roebuck would be very improper, as they would too soon come up with their prey, and, instead of a chase, would only furnish out an engagement. A small mastiff is therefore chosen; nor are the hunters much mindful of the goodness of their nose, as the wild boar leaves so strong a scent that it is impossible for them to mistake its course. They never hunt any but the largest and the oldest, which are known by their tracks. When the boar is *rear'd* as is the expression for driving him from his covert, he goes slowly and uniformly forward, not much afraid, nor very far before his pursuers. At the end of every half mile, or thereabouts, he turns round, stops till the hounds come up, and offers to attack them. These, on the other hand, knowing their danger, keep off, and bay him at a distance. After they have for a while gazed upon each other with mutual animosity, the boar again slowly goes on his course,

and the dogs renew their pursuit. In this manner the charge is sustained, and the chase continues till the boar is quite tired, and refuses to go any farther. The dogs then attempt to close in upon him from behind; those which are young, fierce, and unaccustomed to the chase, are generally the foremost, and often lose their lives by their ardour. Those which are older and better trained are content to wait until the hunters come up, who strike at him with their spears, and, after several blows, despatch or disable him. The instant the animal is killed they cut off the testicles, which would otherwise give a taint to the flesh; and the huntsmen celebrate the victory with their horns.

The Hog, in a natural state, is found to feed chiefly upon roots and vegetables; it seldom attacks any other animal, being content with such provisions as it procures without danger. Whatever animal happens to die in the forest, or is so wounded that it can make no resistance, becomes a prey to the hog, who seldom refuses animal food, how putrid soever, although it is never at the pains of taking or procuring it alive. For this reason it seems a glutton rather by accident than choice, content with vegetable food, and only devouring flesh when pressed by necessity, and when it happens to offer. Indeed, if we behold the hog in its domestic state, it is the most sordid and brutal animal in nature.* The awkardness of its form seems to influence its appetites, and all its sensations are as gross as its shapes are unsightly. It seems possessed only of an insatiable desire of eating; and it seems to make choice only of what other animals find the most offensive. But we ought to consider, that the hog with us is in an unnatural state, and that it is in a manner compelled to feed in this filthy manner, from

* Buffon, vol. ix, p. 14.

wanting that proper nourishment which it finds in the forest. When in a state of wildness, it is of all other quadrupeds the most delicate in the choice of what vegetable it shall feed on, and rejects a greater number than any of the rest. The cow, for instance, as we are assured by Linnæus, eats two hundred and seventy-six plants, and rejects two hundred and eighteen; the goat eats four hundred and forty-nine, and rejects a hundred and twenty-six; the sheep eats three hundred and eighty-seven, and rejects a hundred and forty-one; the horse eats two hundred and sixty-two, and rejects two hundred and twelve; but the hog, more nice in its provision than any of the former, eats but seventy-two plants, and rejects a hundred and seventy-one. The indelicacy of this animal is, therefore, rather in our apprehensions than in its nature; since we find it makes a very distinguishing choice in the quality of its food; and if it does not reject animal putrefaction, it may be because it is abridged in that food which is most wholesome and agreeable to it in a state of nature. This is certain, that its palate is not insensible to the difference of eatables; for, where it finds variety, it will reject the worst, with as distinguishing a taste as any other quadruped whatsoever.* In the orchards of peach trees in North America, where the hog has plenty of delicious food, it is observed, that it will reject the fruit that has lain but a few hours on the ground, and continue on the watch whole hours together for a fresh windfall.

However, the hog is naturally formed in a more imperfect manner than the other animals that we have rendered domestic around us, less active in its motions, less furnished with instinct in knowing what to pursue or avoid. Without attachment, and incapable of instruction, it continues, while it lives,

* British Zoology, vol. i, p. 42.

loss of their eyes. At present the whole wild breed is extinct; but no country makes greater use of the tame kinds, as their flesh, which bears salt better than that of any other animal, makes a principal part of the provisions of the British navy.

As this animal is a native of almost every country, there are some varieties found in the species. That which we call the East India breed, is lower, less furnished with hair, is usually black, and has the belly almost touching the ground; it is now common in England, it fattens more easily than the ordinary kinds, and makes better bacon.

There is a remarkable variety of this animal about Upsal,* which is single hoofed, like the horse, but in no other respect differing from the common kinds. The authority of Aristotle, who first made mention of this kind, has been often called into question: some have asserted, that such a quadruped never existed, because it happened not to fall within the sphere of their own confined observation; however, at present, the animal is too well known to admit of any doubt concerning it. The hog common in Guinea differs also in some things from our own; though shaped exactly as ours, it is of a reddish colour, with long ears, which end in a sharp point, and a tail which hangs down to the pastern; the whole body is covered with short red shining hair, without any bristles, but pretty long near the tail. Their flesh is said to be excellent, and they are very tame.

All these, from their near resemblance to the hog, may be considered as of the same species. The East Indian hog, we well know, breeds with the common kind; whether the same obtains between it and those of Upsal and Guinea, we cannot directly affirm; but where the external similitude is so strong, we may be induced to believe that the appetites and habits

* Amœnit. Acad. vol. v, p. 465.

are the same. It is true, we are told that the Guinea breed will not mix with ours, but keep separate, and herd only together: however, this is no proof of their diversity, since every animal will prefer its own likeness in its mate, and they will only then mix with another sort, when deprived of the society of their own. These, therefore, we may consider as all of the hog kind; but there are other quadrupeds, that, in general resemble this species, which nevertheless are very distinct from them. Travellers, indeed, from their general form, or from their habits and way of living, have been content to call these creatures hogs also; but, upon a closer inspection, their differences are found to be such as entirely to separate the kinds, and make each a distinct animal by itself.

THE PECCARY, OR TAJACU.

THAT animal which of all others most resembles the hog, and yet is of a formation very distinct from it, is called the Peccary, or Tajacu. It is a native of America, and found there in such numbers, that they are seen in herds of several hundreds together, grazing among the woods, and inoffensive, except when offended.

The Peccary at first view resembles a small hog; the form of its body, the shape of its head, the length of its snout, and the form of its legs, are entirely alike: however, when we come to examine it nearer, the differences begin to appear. The body is not so bulky; its legs not so long; its bristles much thicker and stronger than those of the hog, resembling rather the quills of a porcupine than hair; instead of a tail it has only a little fleshy protuberance, which does not even cover its posteriors: but that which is still more extraordinary, and in which it differs from all

other quadrupeds whatsoever, is, that it has got upon its back a lump resembling the navel in other animals, which is found to suppurate a liquor of a very strong smell. The peccary is the only creature that has those kind of glands which discharge the musky substance on that part of its body. Some have them under the belly, and others under the tail; but this creature, by a conformation peculiar to itself, has them on its back. This lump, or navel, is situated on that part of the back which is over the hinder legs; it is, in general, so covered with long bristles that it cannot be seen, except they be drawn aside. A small space then appears, that is almost bare, and only beset with a few short fine hairs. In the middle it rises like a lump; and in this there is an orifice, into which one may thrust a common goose-quill. This hole or bag is not above an inch in depth; and round it, under the skin, are situated a number of small glands, which distil a whitish liquor, in colour and substance resembling that obtained from the civet animal. Perhaps it was this analogy that led Dr. Tyson to say that it smelt agreeably also, like that perfume. But this M. Buffon absolutely denies; affirming, that the smell is at every time, and in every proportion, strong and offensive; and to this I can add my own testimony, if that able naturalist should want a voucher.

But, to be more particular in the description of the other parts of this quadruped; the colour of the body is gristly, and beset with bristles thicker and stronger than those of a common hog; though not near so thick as those of a porcupine, they resemble them in this respect, that they are variegated with black and white rings. The belly is almost bare; and the short bristles on the sides gradually increase in length as they approach the ridge of the back, where some are five inches long. On the head also,

between the ears, there is a large tuft of bristles, that are chiefly black. The ears are about two inches and a half long, and stand upright; and the eyes resemble those of a common hog, only they are smaller. From the lower corner of the eye to the snout is usually six inches; and the snout itself is like that of a hog, though it is but small. One side of the lower lip is generally smooth, by the rubbing of the tusk of the upper jaw. The feet and hoofs are perfectly like those of a common hog; but, as was already observed, it has no tail. There are some anatomical differences in its internal structure, from that of the common hog. Dr. Tyson was led to suppose that it had three stomachs, whereas the hog has but one: however, in this he was deceived, as M. Daubenton has plainly shown that the stomach is only divided by two closings, which gives it the appearance as if divided into three; and there is no conformation that prevents the food in any part of it from going or returning to any other.

The peccary may be tamed like the hog, and has pretty nearly the same habits and natural inclinations. It feeds upon the same aliments; its flesh, though drier and leaner than that of the hog, is pretty good eating; it is improved by castration; and, when killed, not only the parts of generation must be taken instantly away, but also the navel on the back, with all the glands that contribute to its supply. If this operation be deferred for only half an hour, the flesh becomes utterly unfit to be eaten.

The peccary is extremely numerous in all the parts of Southern America. They go in herds of two or three hundred together, and unite, like hogs, in each other's defence. They are particularly fierce when their young are attempted to be taken from them. They surround the plunderer, attack him without fear, and frequently make his life pay the

forfeit of his rashness. When any of the natives are pursued by a herd in this manner, they frequently climb a tree to avoid them; while the peccaries gather round the root, threaten with their tusks; and their rough bristles standing erect, as in the hog kind, they assume a very terrible appearance. In this manner they remain at the foot of the tree for hours together; while the hunter is obliged to wait patiently, and not without apprehensions, until they think fit to retire.

The peccary is rather fond of the mountainous parts of the country than the lowlands; it seems to delight neither in the marshes nor the mud, like our hogs; it keeps among the woods, where it subsists upon wild fruits, roots, and vegetables; it is also an unceasing enemy to the lizard, the toad, and all the serpent kinds, with which these uncultivated forests abound. As soon as it perceives a serpent or a viper, it at once seizes it with its fore hoofs and teeth, skins it in an instant, and devours the flesh. This is often seen, and may, therefore, be readily credited; but as to its applying to a proper vegetable immediately after, as an antidote to the poison of the animal it had devoured, this part of the relation we may very well suspect. The flesh neither of the toad nor viper, as every one now knows, are poisonous; and therefore there is no need of a remedy against their venom. Ray gives no credit to either part of the account; however, we can have no reason to disbelieve that it feeds upon toads and serpents; it is only the making use of a vegetable antidote that appears improbable, and which perhaps had its rise in the ignorance and credulity of the natives.

The peccary, like the hog, is very prolific; the young ones follow the dam, and do not separate till they have come to perfection. If taken at first, they are very easily tamed, and soon lose all their natural

ferocity; however, they never show any remarkable signs of docility, but continue stupid and rude, without attachment, or even seeming to know the hand that feeds them. They only continue to do no mischief, and they may be permitted to run tame without apprehending any dangerous consequences. They seldom stray far from home; they return of themselves to the sty; and do not quarrel among each other, except when they happen to be fed in common. At such times they have an angry kind of growl, much stronger and harsher than that of a hog; but they are seldom heard to scream, as the former, only now and then, when frighted or irritated, they have an abrupt angry manner of blowing like the boar.

The peccary, though like the hog in so many various respects, is nevertheless a very distinct race, and will not mix, nor produce an intermediate breed. The European hog has been transplanted into America, and suffered to run wild among the woods; it is often seen to herd among a drove of peccaries, but never to breed from them. They may therefore be considered as two distinct creatures: the hog is the larger and the more useful animal, the peccary more feeble and local; the hog subsists in most parts of the world, and in almost every climate; the peccary is a native of the warmer regions, and cannot subsist in ours without shelter and assistance. It is more than probable, however, that we could readily propagate the breed of this quadruped, and that, in two or three generations, it might be familiarized to our climate; but as it is inferior to the hog in every respect, so it would be needless to admit a new domestic, whose services are better supplied in the old.

THE CAPIBARA, OR CABIAI.

THERE are some quadrupeds so entirely different from any that we are acquainted with, that it is hard to find a well known animal to which to resemble them. In this case, we must be content to place them near such as they most approach in form and habits, so that the reader may at once have some idea of the creature's shape or disposition, although, perhaps, an inadequate and a very confused one.

Upon that confused idea, however, it will be our business to work; to bring it by degrees to greater precision; to mark out the differences of form, and thus give the clearest notions that words can easily convey. The known animal is a kind of rude sketch of the figure we want to exhibit; from which, by degrees we fashion out the shape of the creature we desire should be known, as a statuary seldom begins his work till the rude outline of the figure is given by some other hand.—In this manner, I have placed the Capibara among the hog kind, merely because it is more like a hog than any other animal commonly known; and yet, more closely examined, it will be found to differ in some of the most obvious particulars.

The Capibara resembles a hog of about two years old, in the shape of its body, and the coarseness and colour of its hair. Like the hog it has a thick short neck, and a rounded bristly back; like the hog, it is fond of the water and marshy places, brings forth many at a time, and, like it, feeds upon animal and vegetable food. But, when examined more nearly, the differences are many and obvious. The head is longer, the eyes are larger, and the snout, instead of being rounded as in the hog, is split, like that of a rabbit or a hare, and furnished with thick strong

whiskers; the mouth is not so wide, the number and the form of the teeth are different, for it is without tusks: like the peccary, it wants a tail; and, unlike to all others of this kind, instead of a cloven hoof, it is in a manner web-footed, and thus entirely fitted for swimming and living in the water. The hoofs before are divided into four parts, and those behind into three; between the divisions there is a prolongation of the skin, so that the foot when spread in swimming, can beat a greater surface of water.

As its feet are thus made for the water, so it is seen to delight entirely in that element; and some naturalists have called it the *Water-hog* for that reason. It is a native of South America, and is chiefly seen frequenting the borders of lakes and rivers, like the otter. It siezes the fish upon which it preys with its hoofs and teeth and carries them to the edge of the lake, to devour them at its ease. It lives also upon fruits, corn, and sugar-canes. As its feet are long and broad, it is often seen sitting up, like a dog that is taught to beg. Its cry more nearly resembles the braying of an ass, than the grunting of a hog. It seldom goes out, except at night, and that always in company. It never ventures far from the sides of the river or the lake in which it preys; for as it runs ill, because of the length of its feet and the shortness of its legs, so its only place of safety is the water, into which it immediately plunges when pursued, and keeps so long at the bottom that the hunter can have no hopes of taking it there. The capibara, even in a state of wildness, is of a gentle nature, and, when taken young is easily tamed. It comes and goes at command, and even shows an attachment to its keeper. Its flesh is said to be fat and tender, but from the nature of its food, it has a fishy taste, like that of all those which are bred in the water. Its head, however, is said to be excellent; and in this it resembles

the beaver, whose fore parts taste like flesh, and the hinder like the fish it feeds on.

THE BABYROUESSA, OR INDIAN HOG.

The Babyrouessa is still more remote from the hog kind than the capibara; and yet most travellers who have described this animal do not scruple to call it the Hog of Borneo, which is an island in the East Indies where it is principally to be found. Probably this animal's figure upon the whole most resembles that of the hog kind, and may have induced them to rank it among the number; however, when they come to its description, they represent it as having neither the hair, the bristles, the head, the stature, nor the tail of a hog. Its legs, we are told, are longer, its snout shorter, its body more slender, and somewhat resembling that of a stag; its hair is finer, of a gray colour, rather resembling wool than bristles, and its tail also tufted with the same. From these varieties, therefore, it can scarcely be called a hog; and yet in this class we must be content to rank it, until its form and nature come to be better known. What we at present principally distinguish it by, are the enormous tusks that grow out of each jaw; the two largest from the upper, and the two smallest from the under. The jaw-bones of this extraordinary animal are found to be very thick and strong, from whence these monstrous tusks are seen to proceed that distinguish it from all other quadrupeds whatsoever. The two that go from the lower jaw are not above a foot long, but those of the upper are above half a yard: as in the boar, they bend circularly, and the two lower stand in the jaw as they are seen to do in that animal; but the two upper

rise from the upper jaw rather like horns than teeth, and bending upwards and backwards, sometimes have their points directed to the animal's eyes, and are often fatal by growing into them. Were it not that the babyrouessa has two such large teeth underneath, we might easily suppose the two upper to be horns; and in fact their sockets are directed upwards, for which reason Dr. Grew was of that opinion. But as the teeth of both jaws are of the same consistence, and as they both grow out of sockets in the same manner, the analogy between both is too strong not to suppose them of the same nature. The upper teeth, when they leave the socket, immediately pierce the upper lips of the animal, and grow as if they immediately went from its cheek. The tusks in both jaws are of a very fine ivory, smoother and whiter than that of the elephant, but not so hard or serviceable.

These enormous tusks give this animal a very formidable appearance, and yet it is thought to be much less dangerous than the wild boar.* Like animals of the hog kind, they go together in a body, and are often seen in company with the wild boar, with which, however, they are never known to engender. They have a very strong scent, which discovers them to the hounds; and when pursued they growl dreadfully, often turning back upon the dogs, and wounding them with the tusks of the lower jaw, for those of the upper are rather an obstruction than a defence. They run much swifter than the boar, and have a more exquisite scent, winding the men and the dogs at a great distance. When hunted closely they generally plunge themselves into the sea, where they swim with great swiftness and facility, diving and rising again at pleasure; and in this manner they most frequently escape their pursuers. Al

* Buffon, vol. xxv. p. 174.

though fierce and terrible when offended, yet they are peaceable and harmless when unmolested. They are easily tamed, and their flesh is good to be eaten; but it is said to putrefy in a very short time. They have a way of reposing themselves different from most other animals of the larger kind, which is by hitching one of their upper tusks on the branch of a tree, and then suffering their whole body to swing down at ease. Thus suspended from a tooth, they continue the whole night quite secure and out of the reach of such animals as hunt them for prey.

The babyrouessa, though by its teeth and tusks it seems fitted for a state of hostility, and probably is carniverous, yet nevertheless seems chiefly to live upon vegetables and the leaves of trees. It seldom seeks to break into gardens, like the boar, in order to pillage the more succulent productions of human industry, but lives remote from mankind, content with coarser fare and security. It has been said that it was only to be found in the island of Borneo; but this is a mistake, as it is well known in many other parts both of Asia aud Africa, as at the Celebes, Estrila, Senegal, and Madagascar.*

Such are the animals of the hog kind, which are not distinctly known; and even all these, as we see, have been but imperfectly examined or described. There are some others of which we have still more imperfect notices; such as the Waree, a hog of the Isthmus of Darien, described by Wafer, with large tusks, small ears, and bristles like a coarse fur over all the body. This, however, may be the European hog, which has run wild in that part of the new world, as no other traveller has taken notice of the same. The Canary boar seems different from other animals of this kind by the largeness of its tusks, and, as is judged from the skeleton, by the aperture

* Anderson's Natural History of Greenland.

of its nostrils, and the number of its grinders. I cannot conclude this account of those animals that are thus furnished with enormous tusks, without observing, that there is a strong consent between these and the parts of generation. When castrated, it is well known that the tusks grow much smaller, and are scarcely seen to appear without the lips; but what is still more remarkable is, that in a boar, if the tusks by any accident or design be broke away, the animal abates of its fierceness and venery, and it produces nearly the same effect upon its constitution as if castration had actually taken place.*

CHAPTER XV.

ANIMALS OF THE CAT KIND.

We have hitherto been describing a class of peaceful and harmless animals, that serve as the instruments of man's happiness, or at least that do not openly oppose him. We come now to a bloody and unrelenting tribe, that disdain to own his power, and carry on unceasing hostilities against him. All the class of the cat kind are chiefly distinguished by their sharp and formidable claws, which they can hide and extend at pleasure. They lead a solitary ravenous life, neither uniting for their mutual defence, like vegetable feeders, nor for their mutual support, like those of the dog kind. The whole of this cruel and ferocious tribe seek their food alone, and, except at certain seasons, are even enemies to each other. The dog, the wolf, and the bear, are sometimes known to live upon vegetables or farinaceous food; but all of the cat kind, such as the lion, the ti-

* Lisle's Husbandry, vol. ii, p. 329.

ger, the leopard, and the ounce, devour nothing but flesh, and starve upon any other provision.

They are in general fierce, rapacious, subtle, and cruel, unfit for society among each other, and incapable of adding to human happiness. However it is probable that even the fiercest could be rendered domestic, if man thought the conquest worth the trouble. . Lions have been yoked to the chariots of conquerors, and tigers have been taught to tend those herds which they are known at present to destroy; but these services are not sufficient to recompense for the trouble of their keeping; so that ceasing to be useful, they continue to be noxious, and become rebellious subjects, because not taken under equal protection with the rest of the brute creation.

Other tribes of animals are classed with difficulty, having often but few points of resemblance, and though alike in form, have different dispositions, and different appetites. But all those of the cat kind, although differing in size or in colour, are yet nearly allied to each other, being equally fierce, rapacious, and artful, and he that has seen one has seen all. In other creatures there are many changes wrought by human assiduity; the dog, the hog, or the sheep, are altered in their natures and forms, just as the necessities or the caprice of mankind have found fitting; but all of this kind are inflexible in their forms, and wear the print of their natural wildness strong upon them. The dogs or cows vary in different countries, but lions or tigers are still found the same; the very colour is nearly alike in all, and the slightest alterations are sufficient to make a difference in the kinds, and to give the animal a different denomination.

The cat kind are not less remarkable for the sharpness and strength of their claws, which thrust forth from their sheath when they seize their prey,

than for the shortness of their snout, the roundness of their head, and the large whiskers which grow on the upper lip. Their teeth also, which amount to the number of thirty, are very formidable, but are rather calculated for tearing their prey than for chewing it:* for this reason they feed but slowly, and while they eat generally continue growling, to deter others from taking a share. In the dog kind, the chief power lies in the under jaw, which is long, and furnished with muscles of amazing strength; but in these, the greatest force lies in the claws, which are extended with great ease, and their gripe is so tenacious that nothing can open it. The hinder parts in all these animals are much weaker than those before, and they seem less made for strength than agility. Nor are they endued with the swiftness of most other animals, but generally owe their subsistence rather to catching their prey by surprise than by hunting it fairly down. They all seize it with a bound, at the same time expressing their fierce pleasure with a roar; and the first grasp generally disables the captive from all further resistance. With all these qualifications for slaughter, they nevertheless seem timid and cowardly, and seldom make an attack, like those of the dog kind, at a disadvantage; on the contrary, they fly when the force against them is superior, or even equal to their own, and the lion himself will not venture to make a second attempt where he has been once repulsed with success. For this reason, in countries that are tolerably inhabited, the lion is so cowardly that he is often scared away by the cries of women and children.

The Cat, which is the smallest animal of this kind, is the only one that has been taken under hu-

[* In quadrupeds of this kind the fore-teeth are equal, the grinders have three points, the tongue is furnished with rough sharp prickles, pointing backwards, and the claws are sheathed and retractile.]

man protection, and may be considered as a faithless friend, brought to oppose a still more insidious enemy.* It is, in fact, the only animal of this tribe whose services can more than recompense the trouble of their education, and whose strength is not sufficient to make its anger formidable. The lion or the tiger may easily be tamed, and rendered subservient to human command; but, even in their humblest and most familiar moments, they are still dangerous; since their strength is such, that the smallest fit of anger or caprice may have dreadful consequences. But the cat, though easily offended, and often capricious in her resentments, is not endowed with powers sufficient to do any great mischief. Of all animals, when young, there is none more prettily playful than the kitten; but it seems to lose this disposition as it grows old, and the innate treachery of its kind is then seen to prevail. From being naturally ravenous, education teaches it to disguise its appetites, and to watch the favourable moment of plunder: supple, insinuating, and artful, it has learnt the arts of concealing its intentions till it can put them into execution; when the opportunity offers, it at once seizes upon whatever it finds, flies off with it, and continues at a distance till it supposes its offence forgotten. The cat has only the appearance of attachment; and it may easily be perceived, by its timid approaches, and side-long looks, that it either dreads its master, or distrusts his kindness: different from the dog, whose caresses are sincere, the cat is assiduous rather for its own pleasure, than to please, and often gains confidence only to abuse it. The form of its body and its temperament correspond with its disposition; active, cleanly, delicate, and voluptuous, it loves its

* This description is nearly translated from M. Buffon: what I have added is marked with inverted commas.

ease, and seeks the softest cushions to lie on. "Many of its habits, however, are rather the consequences of its formation, than the result of any perverseness in its disposition: it is timid and mistrustful, because its body is weak, and its skin tender; a blow hurts it infinitely more than it does a dog, whose hide is thick, and body muscular; the long fur in which the cat is clothed, entirely disguises its shape, which if seen naked, is long, feeble and slender: it is not to be wondered, therefore, that it appears much more fearful of chastisement than the dog, and often flies, even when no correction is intended. Being also a native of the warmer climates, as will be shown hereafter, it chooses the softest bed to lie on, which is always the warmest."

The cat goes with young fifty-six days, and seldom brings forth above five or six at a time. The female usually hides the place of her retreat from the male, who is often found to devour her kittens. She feeds them for some weeks with her milk, and whatever small animal she can take by surprise, accustoming them betimes to rapine. Before they are a year old, they are fit to engender; the female seeks the male with cries; nor is their copulation performed without great pain, from the narrowness of the passage in the female. They live to about the age of ten years; and during that period, they are extremely vivacious, suffering to be worried a long time before they die.

The young kittens are very playful and amusing; but their sport soon turns into malice, and they, from the beginning, show a disposition to cruelty: they often look wistfully towards the cage, sit sentinels at the mouth of a mouse-hole, and in a short time become more expert hunters than if they had received the instruction of art. Indeed, their disposition is so incapable of constraint, that all instruction

would be but thrown away. It is true, that we are told of the Greek monks of the Isle of Cyprus teaching cats to hunt the serpents with which the island is infested; but this may be natural to the animal itself, and they might have fallen upon such a pursuit without any instruction. Whatever animal is much weaker than themselves, is to them an indiscriminate object of destruction. Birds, young rabbits, hares, rats and mice, bats, moles, toads, and frogs, are all equally pursued, though not, perhaps, equally acceptable. The mouse seems to be their favourite game; and although the cat has the sense of smelling in but a mean degree, it nevertheless knows those holes in which its prey resides. I have seen one of them patiently watch a whole day until the mouse appeared, and continue quite motionless until it came within reach, and then seized it with a jump. Of all the marks by which the cat discovers its natural malignity, that of playing and sporting with its little captive, before killing it outright, is the most flagrant.

The fixed inclination which they discover for this peculiar manner of pursuit, arises from the conformation of their eyes. The pupil in man, and in most other animals, is capable but of a small degree of contraction and dilatation; it enlarges a little in the dark, and contracts when the light pours in upon it in too great quantities. In the eyes of cats, however, this contraction and dilatation of the pupil is so considerable, that the pupil, which by day-light appears narrow and small, like the black of one's nail, by night expands over the whole surface of the eyeball, and, as every one must have seen, their eyes seem on fire. By this peculiar conformation, their eyes see better in darkness than light; and the animal is thus better adapted for spying out and surprising its prey.

Although the cat is an inhabitant of our houses, yet it cannot properly be called a dependant; although perfectly tame, yet it acknowledges no obedience; on the contrary, it does only just what it thinks fit, and no art can control any of its inclinations. In general, it is but half tamed, and has its attachments rather to the place in which it resides, than to the inhabitant. If the inhabitant quits the house, the cat still remains; and if carried elsewhere, seems for a while bewildered with its new situation. It must take time to become acquainted with the holes and retreats in which its prey resides, with all the little labyrinths through which they often make good an escape.

The cat is particularly fearful of water, of cold, and of ill smells. It loves to keep in the sun, to get near the fire, and to rub itself against those who carry perfumes. It is excessively fond of some plants, such as valerian, marum, and cat-mint; against these it rubs, smells them at a distance, and at last, if they be planted in a garden, wears them out.

This animal eats slowly, and with difficulty, as its teeth are rather made for tearing than chewing its aliments. For this reason it loves the most tender food, particularly fish, which it eats as well boiled as raw. Its sleeping is very light, and it often seems to sleep, the better to deceive its prey. When the cat walks, it treads very softly, and without the least noise; and as to the necessities of nature, it is cleanly to the last degree. Its fur also is usually sleek and glossy; and, for this reason, the hair is easily electrified, sending forth shining sparks, if rubbed in the dark.

"The wild cat breeds with the tame;* and therefore the latter may be considered only as a variety of the former: however, they differ in some particu-

* British Zoology.

lars; the cat, in its savage state, is somewhat larger than the house cat; and its fur being longer, gives it a greater appearance than it really has: its head is bigger, and face flatter: the teeth and claws much more formidable; its muscles very strong, as being formed for rapine; the tail is of a moderate length, but very thick and flat, marked with alternate bars of black and white, the end always black; the hips, and hind part of the lower joints of the leg, are always black; the fur is very soft and fine: the general colour of these animals, in England, is a yellowish white, mixed with a deep gray. These colours, though they appear at first sight confusedly blended together, yet on a close inspection will be found to be disposed like the streaks on the skin of the tiger, pointing from the back downwards, rising from a black list that runs from the head along the middle of the back to the tail. This animal is found in our larger woods; and is the most destructive of the carnivorous kinds in this kingdom. It inhabits the most mountainous and woody parts of these islands, living mostly in trees, and feeding only by night. It often happens, that the females of the tame kind go into the woods to seek mates among the wild ones. It should seem that these, however, are not original inhabitants of this kingdom, but were introduced first in a domestic state, and afterwards became wild in the woods by ill-usage or neglect. Certain it is, the cat was an animal much higher in esteem among our ancestors than it is at present. By the laws of Howel, the price of a kitten, before it could see, was to be a penny; till it caught a mouse, twopence; and when it commenced mouser, fourpence It was required, besides, that it should be perfect in its senses of hearing and seeing, be a good mouser, have the claws whole, and be a good nurse. If it failed in any of these qualities, the seller was to for-

feit to the buyer the third part of its value. If any one stole or killed the cat that guarded the prince's granary, he was to forfeit a milch ewe, its fleece and lamb, or as much wheat as, when poured on the cat suspended by the tail (the head touching the floor,) would form a heap high enough to cover the tip of the former. From hence we discover, besides a picture of the simplicity of the times, a strong argument that cats were not naturally bred in our forests. An animal that could be so easily taken, could never have been rated so highly; and the precautions laid down to improve the breed, would have been superfluous, in a creature that multiplies to such an amazing degree.

"In our climate, we know but of one variety of the wild cat; and from the accounts of travellers we learn, that there are but very few differences in this quadruped in all parts of the world. The greatest difference, indeed, between the wild and the tame cat, is rather to be found internally than in their outward form. Of all other quadrupeds, the wild cat is, perhaps, that whose intestines are proportionably the smallest and the shortest. The intestines of the sheep, for instance, unravelled out, and measured according to their length, will be found to be above thirty times the length of its body; whereas the wild cat's intestines, being measured out, will not be found above three times the length of its body. This is a surprising difference: but we may account for it from the nature of the food in the two animals; the one living upon vegetables, which require a longer, and a more tedious preparation, before they can become a part of its body; the other living upon flesh, which requires very little alteration in order to be assimilated into the substance of the creature that feeds upon it. The one, therefore, wanted a long canal for properly digesting and straining its food; the other

but a short one, as the food is already prepared to pass the usual secretions: however, a difficulty still remains behind; the intestines of the wild cat are, by one-third, shorter than those of the tame. How can we account for this? If we say that the domestic cat, living upon more nourishing and more plentiful provision, has its intestines enlarged to the quantity with which it is supplied, we shall find this observation contradicted in the wild boar and the wolf, whose intestines are as long as those of the hog or the dog, though they lead a savage life, and, like the wild cat, are fed by precarious subsistence. The shortness, therefore, of the wild cat's intestines is still unaccounted for; and most naturalists consider the difficulty as inextricable. We must leave it, therefore, as one of those difficulties which future observation or accident are most likely to discover."

This animal is one of those few which are common to the new continent as well as the old. When Christopher Columbus first discovered that country, a hunter brought him one which he had discovered in the woods, which was of the ordinary size, the tail very long and thick. They were common also in Peru, although they were not rendered domestic. They are well known also in several parts of Africa, and many parts of Asia. In some of these countries, they are of a peculiar colour, and inclining to blue. In Persia, Pietro della Valle informs us, that there is a kind of cat, particularly in the province of Chorazan, of the figure and form of the ordinary one, but infinitely more beautiful in the lustre and colour of its skin. It is of a gray blue, without mixture, and as soft and shining as silk. The tail is very long, and covered with hair six inches long, which the animal throws upon its back, like the squirrel. These cats are well known in France; and have been brought over into England, under the name of the *blue cat*, which, however, is not their colour.

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2

3

Engd by G.B. Ellis.

1. Lion — 2. Lioness — 3. Tiger.

Another variety of this animal is called by us the *lion cat*, or, as others more properly term it, the Cat of Angora. These are larger than the common cat, and even than the wild one. Their hair is much longer, and hangs about their head and neck, giving this creature the appearance of a lion. Some of these are white, and others of a dun colour. These come from Syria and Persia, two countries which are noted for giving a long soft hair to the animals which are bred in them. The sheep, the goats, the dogs, and the rabbits of Syria, are all remarkable for the fine glossy length and softness of their hair; but particularly the cat, whose nature seems to be so inflexible, conforms to the nature of the climate and soil, loses its savage colour, which it preserves almost in every other part of the world, and assumes the most beautiful appearance. There are some other varieties in this animal, but rather in colour than in form; and in general it may be remarked, that the cat, when carried into other countries, alters but very little, still preserving its natural manners, habits, and conformation.

THE LION.

The influence of climate upon mankind is very small;* he is found to subsist in all parts of the earth, as well under the frozen poles as beneath the torrid zone: but in animals, the climate may be considered as congenial, and a kind of second nature. They almost all have their particular latitudes, beyond which they are unable to subsist; either pe-

* This description is principally taken from M. Buffon; such parts as are added from others, I have marked with commas.

rishing with a moderate cold, or dying for want of a frozen air, even in a temperate climate. The rein-deer is never seen to depart from the icy fields of the north; and, on the contrary, the lion degenerates when taken from beneath the Line. The whole earth is the native country of man, but all inferior animals have each their own peculiar districts.

Most terrestrial animals are found larger, fiercer, and stronger, in the warm than in the cold or temperate climates. They are also more courageous and enterprising, all their dispositions seeming to partake of the ardour of their native soil. The lion produced under the burning sun of Africa, is, of all others, the most terrible, the most undaunted. The wolf or the dog, instead of attempting to rival him, scarcely deserve to attend his motions, or become his providers. Such, however, of these animals as are bred in a more temperate climate, or towards the tops of cold and lofty mountains, are far more gentle, or, to speak more properly, far less dangerous, than those bred in the torrid valleys beneath. The lions of Mount Atlas, the tops of which are covered in eternal snows, have neither the strength nor the ferocity of the lions of Bildulgerid or Zaara, where the plains are covered with burning sands. It is particularly in these frightful deserts that those enormous and terrible beasts are found, that seem to be the scourge and the terror of the neighbouring kingdoms. Happily, indeed, the species is not very numerous, and it seems to be diminishing daily; for those who have travelled through these countries assure us, that there are by no means so many there at present as were known formerly; and Mr. Shaw observes, that the Romans carried fifty times as many lions from Libya in one year, to combat in their amphitheatres, as are to be found in the whole

country at this time. The same remark is made with regard to Turkey, to Persia, and the Indies, where the lions are found to diminish in their numbers every day. Nor is it difficult to assign the cause of this diminution. It is obvious that it cannot be owing to the increase of the force of other quadrupeds, since they are all inferior to the lion, and consequently, instead of lessening the number, only tend to increase the supplies on which they subsist; it must, therefore, be occasioned by the increase of mankind, who is the only animal in nature capable of making head against these tyrants of the forest, and preventing their increase. The arms even of a Hottentot or a Negro make them more than a match for this powerful creature; and they seldom make the attack without coming off victorious. Their usual manner is to find out his retreat, and, with spears headed with iron, to provoke him to the combat. Four men are considered as sufficient for this encounter; and he against whom the lion flies receives him upon his spear, while the others attack him behind. The lion finding himself wounded in the rear, turns that way, and thus gives the man he first attacked an opportunity to recover. In this manner they attack him on all sides, until at last they entirely disable, and then despatch him. The superiority in the numbers and the arts of man, that are sufficient to conquer the lion, serve also to enervate and discourage him; for he is brave only in proportion to the success of his former encounters. In the vast deserts of Zaara, in the burning sands that lie between Mauritania and Negroland, in the uninhabited countries that lie to the north of Caffraria, and, in general, in all the deserts of Africa, where man has not fixed his habitation, the lions are found in great numbers, and preserve their natural courage and force. Accustomed to measure their strength with

every animal they meet, the habit of conquering renders them intrepid and terrible. Having never experienced the dangerous arts and combinations of man, they have no apprehensions from his power. They boldly face him, and seem to brave the force of his arms. Wounds rather serve to provoke their rage than repress their ardour. They are not daunted even with the opposition of numbers: a single lion of the desert often attacks an entire caravan; and, after an obstinate combat, when he finds himself overpowered, instead of flying, he continues to combat, retreating, and still facing the enemy till he dies. On the contrary, the lions which inhabit the peopled countries of Morocco or India, having become acquainted with human power, and experienced man's superiority, have lost all their courage, so as to be scared away with a shout; and seldom attack any but the unresisting flocks or herds, which even women and children are sufficient to protect.

This alteration in the lion's disposition sufficiently shows that he might easily be tamed, and admit of a certain degree of education. "In fact, nothing is more common than for the keepers of wild beasts to play with this animal, to pull out his tongue, and even to chastise him without a cause. He seems to bear it all with the utmost composure; and we very

head, which he had separated from the body, and tossing it round the floor. He immediately, therefore, flew into the next room, called to the people without, and had the animal secured from doing further mischief." However, this single account is not sufficient to weigh against the many instances we every day see of this creature's gentleness and submission. He is often bred up with other domestic animals, and is seen to play innocently and familiarly among them; and, if it ever happens that his natural ferocity returns, it is seldom exerted against his benefactors. As his passions are strong, and his appetites vehement, one ought not to presume that the impressions of education will always prevail; so that it would be dangerous in such circumstances to suffer him to remain too long without food, or to persist in irritating and abusing him: however, numberless accounts assure us, that his anger is noble, his courage magnanimous, and his disposition grateful. He has been often seen to despise contemptible enemies, and pardon their insults when it was in his power to punish them. He has been seen to spare the lives of such as were thrown to be devoured by him, to live peaceably with them, to afford them a part of his subsistence, and sometimes to want food himself rather than deprive them of that life which his generosity had spared.

It may also be said that the lion is not cruel, since he is so only from necessity, and never kills more than he consumes. When satiated he is perfectly gentle; while the tiger, the wolf, and all the inferior kinds, such as the fox, the pole-cat, and the ferret, kill without remorse, are fierce without cause, and, by their indiscriminate slaughter, seem rather to satisfy their malignity than their hunger.

The outward form of the lion seems to speak his internal generosity. His figure is striking, his look

confident and bold, his gait proud, and his voice terrible. His stature is not overgrown, like that of the elephant or rhinoceros; nor is his shape clumsy, like that of the hippopotamus or the ox. It is compact, well proportioned, and sizeable; a perfect model of strength joined with agility. It is muscular and bold, neither charged with fat nor unnecessary flesh. It is sufficient but to see him in order to be assured of his superior force. His large head surrounded with a dreadful mane, all those muscles that appear under the skin swelling with the slightest exertions, and the great breadth of his paws, with the thickness of his limbs, plainly evince that no other animal in the forest is capable of opposing him. He has a very broad face, that, as some have imagined, resembles the human. It is surrounded with very long hair, which gives it a majestic air. The top of the head, the temples, the cheeks, the under jaw, the neck, the breast, the shoulder, the hinder part of the legs, and the belly, are furnished with it, while all the rest of the body is covered with very short hair, of a tawny colour. "The length of the hair in many parts, and the shortness of it in others, serves a good deal to disguise this animal's real figure. The breast, for instance, appears very broad, but in reality it is as narrow and contracted in proportion as that of the generality of dogs and horses. For the same reason, the tail seems to be of an equal thickness from one end to the other, on account of the inequality of the hair with which it is encompassed; it being shorter near the insertion, where the flesh and bones are large, and growing longer in proportion as its real thickness lessens towards the point, where it ends in a tuft. The hair about the neck and the breast is not different from that on the rest of the body, except in the length of it; nor is each hair pointed as in most other animals, but of an

equal thickness from one end to the other. The neck is very strong, but not composed of one solid bone, as Aristotle has imagined; on the contrary, though very short and muscular, it has as many bones as the camel or the horse: for it is universal to all quadrupeds to have seven joints in the neck, and not one of them have either more or less. However, the muscles in the neck of the lion, that tie the bones together, are extremely strong, and have somewhat the appearance of bones; so that ancient authors who have treated of this animal, have mistaken the whole for a single bone. The tongue is rough, and beset with prickles as hard as a cat's claws; these have the grain turned backwards; so that it is probable a lion, if it should attempt to lick a man's hand, as we are told it sometimes does, would tear off the skin. The eyes are always bright and fiery, nor even in death does this terrible look forsake them. In short, the structure of the paws, teeth, eyes, and tongue, are the same as in a cat; and also in the inward parts these two animals so nearly resemble each other, that the anatomist's chief distinction arises merely from the size."

The lion has, as was observed before, a large mane, which grows every year longer as the animal grows older; the lioness is without this ornament at every age. This mane is not coarse or rough as in a horse, but composed of the same hair with the rest of the body, lengthened and shining. The mane, as well as the rest of the body, is of a yellow colour; nor is there ever any difference to be found in the colour of one lion from that of another. What the ancients might have said concerning black lions, or white, or streaked like the tiger, is not confirmed by modern experience; so that these varieties have never been seen, or exist no longer.

It is usually supposed that the lion is not possessed

of the sense of smelling in such perfection as most other animals. It is also observed, that too strong a light greatly incommodes him. This is more than probable from the formation of his eyes, which, like those of the cat, seem fitted for seeing best in the dark. For this reason he seldom appears in open day, but ravages chiefly by night; and not only the lion, but all other animals of the cat kind, are kept off by the fires which the inhabitants light to preserve their herds and flocks: the brightness of the flame dazzles their eyes, which are only fitted for seeing in the dark; and they are afraid to venture blindly into those places which they know to be filled with their enemies. "It is equally true of all this kind, that they hunt rather by the sight than the smell; and it sometimes happens that the lion pursues either the jackall or the wild dog while they are hunting upon the scent, and when they have run the beast down he comes in and monopolizes the spoil. From hence probably may have arisen the story of the lion's provider: these little industrious animals may often, it is true, provide a feast for the lion, but they have hunted merely for themselves, and he is an unwelcome intruder upon the fruits of their toil."

The lion when hungry boldly attacks all animals that come in his way; but as he is very formidable, and as they all seek to avoid him, he is often obliged to hide, in order to take them by surprise. For this purpose he crouches on his belly in some thicket, or among the long grass which is found in many parts of the forest: in this retreat he continues, with patient expectation, until his prey comes within a proper distance, and he then springs after it fifteen or twenty feet from him, and often seizes it at the first bound. If he misses the effort, and in two or three reiterated springs cannot seize his prey, he continues

motionless for a time, seems to be very sensible of his disappointment, and waits for a more successful opportunity. In the deserts and forests, his most usual prey are the gazelles and the monkeys, with which the torrid regions abound. The latter he takes when they happen to be upon the ground, for he cannot climb trees like the cat or the tiger. He devours a great deal at a time, and generally fills himself for two or three days to come. His teeth are so strong that he very easily breaks the bones, and swallows them with the rest of the body. It is reported that he sustains hunger a very long time, but thirst he cannot support in an equal degree, his temperament being extremely hot; some have even asserted that he is in a continual fever. He drinks as often as he meets with water, lapping it like a cat, which, as we know, drinks but slowly. He generally requires about fifteen pounds of raw flesh in a day; he prefers that of live animals, and particularly those which he has just killed. He seldom devours the bodies of animals when they begin to putrefy; and he chooses rather to hunt for a fresh spoil, than to return to that which he had half devoured before. However, though he usually feeds upon fresh provision, his breath is very offensive, and his urine insupportable.

The roaring of the lion is so loud, that when it is heard in the night, and re-echoed by the mountains, it resembles distant thunder. This roar is his natural note; for when enraged he has a different growl, which is short, broken, and reiterated. The roar is a deep hollow growl, which he sends forth five or six times a-day, particularly before rains. The cry of anger is much louder, and more formidable. This is always excited by opposition; and upon these occasions, when the lion summons up all his terrors for the combat, nothing can be more terrible. He

then lashes his sides with his long tail, which alone is strong enough to lay a man level. He moves his mane in every direction; it seems to rise and stand like bristles round his head; the skin and muscles of his face are all in agitation; his huge eye-brows half cover his glaring eye-balls; he discovers his teeth, which are formed rather for destruction than chewing his food; he shows his tongue covered with points, and extends his claws, which appear almost as long as a man's fingers. Prepared in this manner for war, there are few animals that will venture to engage him, and even the boldest of the human kind are daunted at his approach. The elephant, the rhinoceros, the tiger, and the hippopotamus, are the only animals that are not afraid singly to make opposition.

"Nevertheless, neither the leopard nor the wild boar, if provoked, will shun the combat; they do not seek the lion to attack, but will not fly at his approach; they wait his onset, which he seldom makes unless compelled by hunger; they then exert all their strength, and are sometimes successful. We are told of the combat of a lion and a wild boar, in a meadow near Algiers, which continued for a long time with incredible obstinacy. At last both were seen to fall by the wounds they had given each other, and the ground all about them was covered with their blood. These instances, however, are very rare, for the lion is in general the undisputed master of the forest. Man is the only creature that attacks him with almost certain success, with the assistance of dogs and horses, which are trained to the pursuit. These animals, that in a state of nature would have fled from the presence of the lion in an agony of consternation, when conscious of the assistance of man, become pursuers in their turn, and boldly hunt their natural tyrant. The dogs are

always of the large breed; and the horses themselves, as Gesner assures us, must be of that sort called Charossi, or lion-eyed, all others of this kind flying at the sight of the lion, and endeavouring to throw their riders. When the lion is roused, he recedes with a slow proud motion; he never goes off directly forward, nor measures his paces equally, but takes an oblique course, going from one side to the other, and bounding rather than running. When the hunters approach him, they either shoot or throw their javelins; and in this manner disable him before he is attacked by the dogs, many of whom he would otherwise destroy. He is very vivacious, and is never killed at once, but continues to fight desperately even after he has received his mortal blow. He is also taken by pit-falls, the natives digging a deep hole in the ground, and covering it slightly over with sticks and earth; which, however, give way beneath his weight, and he sinks to the bottom, from whence he has no means of escape. But the most usual manner of taking this animal is while a cub, and incapable of resistance. The place near the den of the lioness is generally well known by the greatness of her depredations on that occasion; the natives, therefore, watch the time of her absence, and, aided by a swift horse, carry off her cubs, which they sell to strangers, or to the great men of their country."

The lion while young and active lives by hunting in the forest, at the greatest distance from any human habitation, and seldom quits this retreat while able to subsist by his natural industry; but when he becomes old, and unfit for the purposes of surprise, he boldly comes down into places more frequented, attacks the flocks and herds that take shelter near the habitation of the shepherd or the husbandman, and depends rather upon his courage than his ad-

dress for support. It is remarkable, however, that when he makes one of these desperate sallies, if he finds men and quadrupeds in the same field, he only attacks the latter, and never meddles with men, unless they provoke him to engage. It is observed that he prefers the flesh of camels to any other food; he is likewise said to be fond of that of young elephants: these he often attacks before their trunk is yet grown, and unless the old elephant comes to their assistance, he makes them an easy prey.

The lion is terrible upon all occasions, but particularly at those seasons when he is incited by desire, or when the female has brought forth. It is then that the lioness is seen followed by eight or ten males, who fight most bloody battles with each other, till one of them becomes victorious over all the rest. She is said to bring forth in spring, and to produce but once a-year. "With respect to the time of gestation, naturalists have been divided, some asserting that the lioness went with young six months, and others but two. The time also of their growth and their age have hitherto been left in obscurity; some asserting that they acquired their full growth in three years, and others that they required a longer period to come to perfection; some saying (and among this number is M. Buffon) that they lived to but twenty, or twenty-two years at most; others making their lives even of shorter duration. All these doubts are now reduced to certainty; for we have had several of these animals bred in the Tower; so that the manner of their copulation, the time of their gestation, the number they bring forth, and the time they take to come to perfection, are all pretty well known. Although the lion emits his urine backwards, yet he couples in the ordinary manner; and, as was said before, his internal structure in almost every respect resembles that of a cat. The lioness,

however, is upon these occasions particularly fierce, and often wounds the lion in a terrible manner. She goes with young, as I am assured by her keeper, no more than five months; the young ones, which are never more than two in number, when brought forth, are about the size of a large pug-dog, harmless, pretty, and playful; they continue the teat for twelve months and the animal is more than five years in coming to perfection. As to its age, from its imprisoned state we can have no certainty; since it is very probable that, being deprived of its natural climate, food and exercise, its life must be very much abridged. However, naturalists have hitherto been greatly mistaken as to the length of its existence. The great he-lion, called Pompey, which died in the year 1760, was known to have been in the Tower for above seventy years; and one lately died there which was brought from the river Gambia, that died above sixty-three. The lion, therefore, is a very long-lived animal; and very probably, in his native forests, his age exceeds even that of man himself."

In this animal, all the passions, even of the most gentle kind, are in excess, but particularly the attachment of the female to her young. The lioness, though naturally less strong, less courageous, and less mischievous than the lion, becomes terrible when she has got young ones to provide for. She then makes her incursions with even more intrepidity than the lion himself; she throws herself indiscriminately among men and other animals; destroys without distinction; loads herself with the spoil, and brings it home reeking to her cubs, whom she accustoms betimes to cruelty and slaughter. She usually brings forth in the most retired and inaccessible places; and when she fears to have her retreat discovered, often hides her tracts, by running back her ground, or by brushing them out with her tail. She

sometimes also, when her apprehensions are great, transports them from one place to another, and, if obstructed, defends them with determined courage, and fights to the last.

The lion is chiefly an inhabitant of the torrid zone, and, as was said, is always most formidable there; nevertheless, he can subsist in more temperate climates, and there was a time when even the southern parts of Europe were infested by him. At present he is only found in Africa and the East Indies, in some of which countries he grows to an enormous height. The lion of Bildulgerid is said to be nearly five feet high, and between nine and ten feet from the tip of the nose to the insertion of the tail. We have in the Tower at present one of above four feet high, that was brought from Morocco, which is the largest that for some time past has been seen in Europe. The ordinary size is between three and four feet, the female being, in all her dimensions, about one third less than the male. There are no lions in America: the Puma, which has received the name of the American Lion, is, when compared, a very contemptible animal, having neither the shape, the size, nor the mane of the lion; being known to be extremely cowardly, to climb trees for its prey, to subsist rather by its cunning than its courage, and to be inferior even to the animal that goes by the name of the American Tiger. We ought not, therefore, to confound this little treacherous creature with the lion, which all the ancients have concurred in denominating the king of beasts, and which they have described as brave and merciful. "Indeed, the numerous accounts which they have given us of this animal's generosity and tenderness, show that there must be some foundation for the general belief of its good qualities; for mankind seldom err when they are all found to unite in

the same story. However, perhaps the caution of Aristophanes, the comic poet, is better followed in practice who advises us to have nothing to do with this creature, but to let the lioness suckle her own whelps."*

THE TIGER.

"The ancients had a saying, *That as the peacock is the most beautiful among birds, so is the tiger among quadrupeds.*† In fact no quadruped can be more beautiful than this animal; the glossy smoothness of his hair which lies much smoother, and shines with greater brightness than even that of the leopard; the extreme blackness of the streaks with which he is marked, and the bright yellow colour of the ground which they diversify, at once strike the beholder. To this beauty of colouring is added an extremely elegant form, much larger indeed than that of the leopard but more slender, more delicate, and bespeaking the most extreme swiftness and agility. Unhappily however, this animal's disposition is as mischievous as its form is admirable, as if Providence was willing to show the small value of beauty, by bestowing it on the most noxious of quadrupeds. We have at present, one of these animals in the Tower, which to the view appears the most good-natured and harmless creature in the world: its physiognomy is far from fierce or angry; it has not the commanding stern countenance of the lion, but a gentle placid air; yet for all this it is fierce and savage beyond measure; neither correction can terrify, it, nor indulgence can tame."

* Ου χρη λεοντος σκυμνον ιν πολει τρεφειν.

† Tantum autem præstat pulchritudine tigris inter alias feras, quantum inter volucres pavo.

The chief and most observable distinction in the tiger, and in which it differs from all others of the mottled kind, is in the shape of its colours, which run in streaks or bands in the same direction as his ribs, from the back down to the belly. The leopard, the panther, and the ounce, are all partly covered like this animal, but with this difference, that their colours are broken in spots all over the body; whereas in the tiger they stretch lengthwise, and there is scarcely a round spot to be found on his skin. Besides this, there are other observable distinctions: the tiger is much larger, and often found bigger than even the lion himself; it is much slenderer also in proportion to its size, its legs shorter, and its neck and body longer. In short, of all other animals, it most resembles the cat in shape; and if we conceive the latter magnified to a very great degree, we shall have a tolerable idea of the former.

In classing carniverous animals we may place the lion foremost;* and immediately after him follows the tiger, which seems to partake of all the noxious qualities of the lion: without sharing any of his good ones. To pride, courage, and strength, the lion joins greatness, clemency, and generosity; but the tiger is fierce without provocation, and cruel without necessity. The lion seldom ravages except when excited by hunger, the tiger on the contrary, though glutted with slaughter, is not satisfied, still continues the carnage, and seems to have its courage only inflamed by not finding resistance.† In falling in among a

* The remainder of this description is taken from M. Buffon, except where marked with commas.

[† There is a sort of cruelty in the devastations of the tiger unknown to the generous lion, as well as a poltroonery in its sudden retreat on any disappointment. "In the beginning of this century," says Mr. Pennant, "some gentlemen and ladies, being on a party of pleasure, were seated under a shade of trees on the banks of a river in Bengal, when they observed a tiger preparing for its fatal spring; one of the ladies, with amazing presence of mind, laid hold of an umbrella, and unfurl-

flock or a herd it gives no quarter, but levels all with indiscriminate cruelty, and scarce finds time to appease its appetite, while intent upon satisfying the malignity of its nature. It thus becomes the scourge of the country where it is found; it fears neither the threats nor the opposition of mankind; the beasts both wild and tame fall equally a sacrifice to its insatiable fury; the young elephant and the rhinoceros become equally its prey, and it not unfrequently ventures to attack even the lion himself.

It is happy for the rest of nature that this animal is not common, and that the species is chiefly confined to the warmest provinces of the East. The tiger is found in Malabar, in Siam, in Bengal, and in all the countries which are inhabited by the elephant or the rhinoceros. Some even pretend that it has a friendship for, and often accompanies the latter, in order to devour its excrements, which serve it as a purge. Be this as it will, there is no doubt but that they are often seen together at the sides of lakes and rivers, where they are probably both compelled to go by the thirst which in that torrid climate they must very often endure. It is likely enough, also, that they seldom make war upon each other, the rhinoceros being a peaceable animal, and the tiger knowing its strength too well to venture the engagement It is still more likely that the tiger finds this a very convenient situation, since it can there surprise a greater number of animals, which are compelled thither from the same motives. In fact, it is generally known to lurk near such places where it has an opportunity of choosing its prey, or rather of

ed it in the animal's face, which instantly retired and thus gave the company an opportunity of removing from so terrible a neighbour. Another party, however, had not the same good fortune: a tiger darted among them while they were at dinner, seized on one gentleman, carried him off, and he never was more heard of."

multiplying its massacres. When it has killed one, it often goes to destroy others, swallowing their blood down at large draughts, and seeming rather glutted than satiated with its abundance.

However, when it has killed a large animal, such as a horse or a buffalo, it immediately begins to devour it on the spot, fearing to be disturbed. In order to feast at its ease, it carries off its prey to the forest, dragging it along with such ease, that the swiftness of its motion seems scarcely retarded by the enormous load it sustains. From this alone we may judge of its strength; but, to have a more just idea of this particular, let us stop a moment to consider the dimensions of this most formidable creature. Some travellers have compared it for size to a horse, and others to a buffalo, while others have contented themselves with saying that it is much larger than a lion. We have recent accounts of this animal's magnitude that deserve the utmost confidence. M. Buffon has been assured by one of his friends, that he saw a tiger in the East Indies fifteen feet long. "Supposing that he means including the tail, this animal, allowing four feet for that, must have been eleven feet from the tip of the nose to the insertion of the tail. Indeed that which is now in the Tower is not so large, being, as well as I could measure, six feet from the tip to the insertion, and the tail was three feet more. Like all the rest of its kind, its motions are irregular and desultory; it bounds rather than runs; and like them rather chooses to take its prey by surprise than to be at the trouble of hunting it down." How large a leap it can take at once we may easily judge, by comparing what it might do to what we see so small an animal as the cat actually perform. The cat can leap several feet at a bound; and the tiger, who is ten times as long, can no doubt spring proportionably.

"The tiger is the only animal whose spirit seems untameable. Neither force nor constraint, neither violence nor flattery, can prevail in the least on its stubborn nature. The caresses of the keeper have no influence on their heart of iron; and time, instead of mollifying its disposition, only serves to increase its fierceness and malignity. The tiger snaps at the hand that feeds it as well as that by which it is chastised: every object seems considered only as its proper prey, which it devours with a look; and, although confined by bars and chains, still makes fruitless efforts, as if to show its malignity when incapable of exerting its force."

To give a still more complete idea of the strength of this terrible creature, we shall quote a passage from Father Tachard, who was an eye-witness of a combat between a tiger and three elephants at Siam. For this purpose, the king ordered a lofty palisade to be built of bamboo cane, about a hundred feet square; and in the midst of this were three elephants appointed for combating the tiger. Their heads and a part of their trunk were covered with a kind of armour, like a mask, which defended that part from the assaults of the fierce animal with which they were to engage. As soon, says this author, as we were arrived at the place, a tiger was brought forth from its den, of a size much larger than we had ever seen before. It was not at first let loose, but held with cords, so that one of the elephants approaching, gave it three or four terrible blows with its trunk on the back, with such force, that the tiger was for some time stunned, and lay without motion as if it had been dead. However, as soon as it was let loose, and at full liberty, although the first blows had greatly abated its fury, it made at the elephant with a loud shriek, and aimed at seizing his trunk. But the elephant, wrinkling it up with great dexterity,

received the tiger on his great teeth, and tossed it up into the air. This so discouraged the furious animal, that it no more ventured to approach the elephant, but made several circuits round the palisade, often attempting to fly at the spectators. Shortly after, three elephants were sent against it, and they continued to strike it so terribly with their trunks, that it once more lay for dead; and they would certainly have killed it, had not there been a stop put to the combat.

From this account we may readily judge of the strength of this animal, which, although reduced to captivity, and held by cords, though first disabled, and set alone against three, yet ventured to continue the engagement, and even that against animals covered and protected from its fury.

"Captain Hamilton informs us, that in the Sundah Rajah's dominions there are three sorts of tigers in the woods, and that the smallest are the fiercest. This is not above two feet high, appears to be extremely cunning, and delights in human flesh. The second kind is about three feet high, and hunts deer and wild hogs, besides the little animal which has been already described under the name of the Chevrotain, or Guinea-deer. The tiger of the largest sort is above three feet and a half high; but, although endowed with greater powers, is by no means so rapacious as either of the former. This formidable animal, which is called the Royal Tiger, (one of which we have at present in the Tower,) does not seem so ravenous nor so dangerous, and is even more cowardly. A peasant in that country, as this traveller informs us, had a buffalo fallen into a quagmire, and while he went for assistance, there came a large tiger, that with its single strength drew forth the animal, which the united force of many men could not effect. When the people returned to the place, the

first object they beheld was the tiger, who had thrown the buffalo over its shoulder, as a fox does a goose, and was carrying it away, with the feet upward, towards its den: however, as soon as it saw the men, it let fall its prey, and instantly fled to the woods; but it had previously killed the buffalo, and sucked its blood; and, no doubt, the people were very well satisfied with its retreat. It may be observed, that some East Indian buffaloes weigh above a thousand pounds, which is twice as heavy as the ordinary run of our black cattle; so that from hence we may form a conception of the enormous strength of this rapacious animal, that could thus run off with a weight at least twice as great as that of itself.

"Were this animal as common as the panther, or even as the lion himself, thus furnished as it is with the power to destroy, and the appetite for slaughter, the country would be uninhabitable where it resides. But luckily the species is extremely scarce; and has been so since the earliest accounts we have had of the tiger. About the times of Augustus, we are assured by Pliny,* that when panthers were brought to Rome by hundreds, a single tiger was considered as an extraordinary sight; and he tells us, that the Emperor Claudius was able to procure four only, which shows how difficultly they were procured. The incredible fierceness of this animal may be, in some measure, the cause of the scarcity which was then at Rome, since it was the opinion of Varro, that the tiger was never taken alive;† but its being a native only of the East Indies, and that particularly of the warmer regions, it is not to be wondered that the species should be so few."

We may therefore consider the species of the true streaked tiger as one of the scarcest of animals, and

* Plin. Hist. Nat. lib. viii, c. 17.

† Tigris vivus capi adhuc non potuit. Var. de Ling. Lat.

much less diffused than that of the lion. * As to the number of its young, we have no certain accounts; however, it is said that it brings forth four or five at a time. Although furious at all times, the female, upon this occasion, exceeds her usual rapacity; and if her young are taken from her, she pursues the spoiler with incredible rage: he, to save a part, is contented to lose a part, and drops one of her cubs, with which she immediately returns to her den, and again pursues him; he then drops another, and by the time she has returned with that, he generally escapes with the remainder. If she loses her young entirely, she then becomes desperate, boldly approaches even the towns themselves, and commits incredible slaughter. The tiger expresses its resentment in the same manner with the lion; it moves the muscles and skin of its face, shows its teeth, and shrieks in the most frightful manner. Its note is very different from that of the lion, being rather a scream than a roar; and the ancients expressed it very well when they said, that, *tigrides indomitæ raucant rugiuntque leones.*

The skin of these animals is much esteemed all over the East, particularly in China; the Mandarines cover their seats of justice in the public places with it, and convert it into coverings for cushions in winter. In Europe, these skins, though but seldom to be met with, are of no great value, those of the panther and the leopard being held in much greater estimation. This is all the little benefit we derive from this dreadful animal, of which so many falsehoods have been reported; as, that its sweat was poisonous, and the hair of its whiskers more dangerous than an envenomed arrow. But the real mischiefs which the tiger occasions while living are sufficient, without giving imaginary ones to the parts of its body when dead. In fact, the Indians some-

times eat its flesh, and find it neither disagreeable nor unwholesome.

There is an animal of America which is usually called the Red Tiger, but M. Buffon calls it the Cougar, which, no doubt, is very different from the tiger of the East. Some, however, have thought proper to rank both together; and I will take leave to follow their example, merely because the cougar is more like a tiger in every thing, except the colour, than any other animal I know, having the head, the body, and the neck shaped very much in the same manner. Of these slight differences words would give but a very faint idea; it will be, therefore, sufficient to observe, that they are both equally slender, and are smaller, where the neck joins the head, than others of the panther kind. There is one at present in the Tower; and it seemed to me, as well as I could see it through the bars, that were it properly streaked and coloured, it would in all things resemble a small tiger. It is, however, of a very different colour, being of a deep brown, and the tail very long and pointed. It is rather darker on the back; under the chin it is a little whitish, as also on the lower part of the belly.

Of all the American animals this is the most formidable and mischievous, even their pretended lion not excepted. It is said there are several sorts of them; and, as well as I can remember, I have seen one or two here in England, both differing from the present in size and conformation. It is, indeed, a vain endeavour to attempt to describe all the less obvious varieties in the cat kind. If we examine them minutely, we shall find the differences multiply upon us so much, that, instead of a history, we shall only be paid with a catalogue of distinctions. From such of them as I have seen within these last six years, I think I could add two animals of this spe-

cies that have not been hitherto described, and with the names of which he that showed them was utterly unacquainted. But it is a poor ambition that of being eager to find out new distinctions, or adding one noxious animal more to a list that is already sufficiently numerous. Were the knowing a new variety to open an unknown history, or in the least to extend our knowledge, the inquiry would be then worth pursuing; but what signifies mentioning some trifling difference, and from thence becoming authors of a new name, when the difference might have originally proceeded either from climate, soil, or indiscriminate copulation.

The cougars are extremely common in South America, and, where the towns border upon the forest, they make frequent incursions by night into the midst of the streets, carrying off fowls, dogs, and other domestic creatures. They are, however, but weak and contemptible compared to the great tiger, being found unable to cope with a single man. The Negroes and Indians are very dexterous in encountering them; and some, even for the sake of their skins, seek them in their retreats. The arms in this combat, seemingly so dangerous, are only a lance of two or three yards long, made of heavy wood, with the point hardened in the fire, and a kind of scimitar of about three quarters of a yard in length. Thus armed, they wait till the tiger makes an assault against the left hand, which holds the lance, and is wrapped up in a short cloak of baize. Sometimes the animal, aware of the danger, seems to decline the combat; but then its antagonist provokes it with a slight touch of the lance, in order, while he is defending himself, to strike a sure blow. As soon, therefore, as the creature feels the lance, it grasps it with one of its paws, and with the other strikes at the arm which holds it. Then it is that the person

nimbly aims a blow with his scimitar, which he kept concealed, with the other hand, and hamstrings the creature, which immediately draws back enraged, but instantly returns to the charge. But then, receiving another stroke, it is totally deprived of the power of motion; and the combatant, killing it at his leisure, strips the skin, cuts off the head, and returns to his companions, displaying these as the trophies of his victory.

This animal, as we are assured, is often more successful against the crocodile, and it is the only quadruped in that part of the world that is not afraid of the engagement. It must be no unpleasant sight to observe, from a place of safety, this extraordinary combat between animals so terrible and obnoxious to man. Such as have seen it, describe it in the following manner. When the tiger, impelled by thirst, that seems continually to consume it, comes down to the river side to drink, the crocodile, which makes no distinction in its prey, lifts its head above water to seize it: the tiger, not less rapacious than the other, and unacquainted with the force of the enemy, boldly ventures to seize it, and plunges its claws into the eyes of the crocodile, which is the only vulnerable part of its body: upon this the crocodile instantly dives under water, and the tiger goes down with him, for he will sooner die than let go his hold. In this manner the combat continues for some time, until the tiger is drowned, or escapes, as is sometimes the case, from its disabled enemy.

These animals are common in Guiana.* They were formerly seen swimming over in great numbers into the island of Cayenne, to attack and ravage the flocks and herds of the inhabitants. In the beginning they were a terrible scourge to the infant colony; but by degrees they were repulsed and de-

* Buffon, vol. xix, p. 22.

stroyed, and are now seen no longer at that place. They are found in Brazil, in Paraguay, in the country of the Amazons, and in several other parts of South America. They often climb trees in quest of prey, or to avoid their pursuers. They are deterred by fire, like all other animals of the cat kind; or, more properly speaking, they seldom venture near those places where they see it kindled, as they are always sure of their enemies being near, and their nocturnal eyes are dazzled by the brightness of the blaze. From the description of this animal, one would be hardly led to suppose that its flesh was good for food, and yet we have several accounts which allege the fact, some asserting it to be superior even to mutton; however, what Monsieur Desmarchais observes is most likely to be true, namely, that the most valuable part of this animal is its skin, and that its flesh is but indifferent eating, being generally lean, and usually having a strong fumet.

THE PANTHER AND THE LEOPARD.

We have hitherto found no great difficulty in distinguishing one animal from another, each carrying its own peculiar marks, which in some measure serve to separate it from all the rest. But it is otherwise when we come to those of the cat kind that fill up the chasm between the tiger and the cat. The spots with which their skins are diversified are so various, and their size so equivocal, that it is no easy matter to distinguish the species, particularly as we have little else but the spots and the size to guide us in making the distinction. If we regard the figure and diversity of the spots, we shall find many varieties not taken notice of by any nuturalist; if we are led

1

2

3

Engd by G.B.Ellis

1 Panther _ 2 Leopard _ 3 Ounce?

by the size, we shall find an imperceptible gradation from the cat to the tiger. It would be vain, therefore, to make as many varieties in these animals as we see differences in spots or stature; it will be sufficient to seize the most general distinctions, and leave the rest to such as are fond of more minute disquisitions.

Of all this tribe, whose skins are so beautifully spotted, and whose natures are so mischievous, the Panther may be considered as the foremost. This animal has been by many naturalists mistaken for the tiger, and in fact it approaches next to it in size, fierceness, and beauty. It is distinguished, however, by one obvious and leading character, that of being spotted, not streaked; for in this particular the tiger differs from the panther, the leopard, and almost all the inferior ranks of this mischievous family.

This animal, which M. Buffon calls simply the Panther, Linnæus the Pard, Gesner the Pardalis, and the modern Latins the Leopardus; this animal, I say, which goes by too many names, and which the English have indiscriminately called by the name of the Panther or the Leopard, may be considered as the largest of the kind, and is spotted in a manner somewhat different from those that are smaller. As those spots, however, make the principal difference between it and the lesser animals, which it otherwise resembles in shape, size, disposition, and beauty, I will first show these light distinctions, and mention the names each animal has received in consequence thereof, and then proceed to give their history together, still marking any peculiarity observa ble in one of the species which is not found in the rest.

Next to the great panther, already mentioned, is the animal which M. Buffon calls the Leopard, a name which he acknowledges to be given arbitrari-

ly, for the sake of distinction. Other naturalists have not much attended to the slight differences between this and the great panther, nor have they considered its discriminations as sufficient to entitle it to another name. It has hitherto, therefore, gone under the name of the Leopard, or Panther of Senegal, where it is chiefly found. The differences between this animal and the former are these: the large panther is often found to be six feet long from the tip of the nose to the insertion of the tail; the panther of Senegal is not above four. The large panther is marked with spots in the manner of a rose, that is, five or six make a kind of circle, and there is generally a large one in the middle; the leopard of Senegal has a much more beautiful coat, the yellow is more brilliant, and the spots are smaller, and not disposed in rings, but in clusters. As to the rest, they are both whitish under the belly; the tail in both is pretty long, but rather longer in proportion in the latter than in the former. To these two animals, whose differences seem to be so very minute, we may add a third, namely, the Jaguar or Panther of America. This in every respect resembles the two former, except in the disposition of its spots, and that its neck and head are rather streaked than spotted. The jaguar is also said to be lower upon its legs, and less than the leopard of Senegal. These three quadrupeds, as we see, have but very slight differences, and the principal distinction used by M. Buffon is taken from the size; the first, as he says, is usually six feet long, the second four feet, and the last about three: however, it appears from the particular subjects of his description, that the panther in his possession was not above three feet seven inches long; that the leopard's skin which he describes was about four; and that the jaguar, at two years old, was between two and three feet

1. *Jaguar* – 2. *Lynx* – 3. *Cougar*.

long, which, when come to its full growth, would no doubt be four feet long, as well as the two former. From hence, therefore, we may conclude, that the size in these animals is not sufficient to make a distinction among them; and that those who called them all three by the indiscriminate names of the leopard and the panther, if not right, were at least excusable. Of those which are now to be seen in the Tower, the jaguar or the American panther, is rather the largest of the three, and is by no means the contemptible animal which M. Buffon describes it to be: the leopard is the least of them, and has by some travellers been supposed to be an animal produced between the panther and the ounce, an animal which resembles, but is less than any of the former. These three animals we may therefore rank together, as they agree pretty nearly in their robe, their size, their dispositions, and their ferocity.

We come next to an animal confessedly different from any of the former, being much smaller, and its colour more inclining to white. Its name, however, in our language, has caused no small confusion. It has been generally called by foreigners the Onza, or the Ounce, and this name some of our own writers have thought proper to give it; but others of them, and these the most celebrated, such as Willoughby, have given this name to a different animal, with a short tail, and known to the ancients and moderns by the name of the Lynx. I confess myself at a loss in this case whom to follow, the alteration of names should be always made with great caution, and never but in cases of necessity. If we follow Willoughby, there will be an animal of the panther kind very distinguishable from all the rest, left without a name; and if we recede from him, it will serve to produce some confusion among all the numerous class of readers and writers who

have taken him for their guide: however, as he seems himself to have been an innovator, the name of the lynx having been long adopted into our language before, it was unnecessary to give the animal that bore it another name, and to call that creature an ounce which our old writers had been accustomed to know by the Latin appellation; for this reason, therefore, we may safely venture to take a name that has been long misapplied from the lynx, and restore it to the animal in question. We will therefore call that animal of the panther kind, which is less than the panther, and with a longer tail, the Ounce, and the lynx may remain in possession of that name by which it was known among all our old English writers, as well as by all antiquity.

The Ounce, or the Onza of Linnæus, is much less than the panther, being not at most above three feet and a half long; however, its hair is much longer than that of the panther, and its tail still more so. The panther of four or five feet long has a tail but of two feet, or two feet and a half. The ounce, which is but about three feet, has a tail often longer than the rest of its body. The colour of the ounce is also apparently different, being rather more inclining to a cream colour, which is deeper on the back, and whiter towards the belly. The hair on the back is an inch and a half long, and that on the belly two inches and a half, which is much longer than that of the panther. Its spots are disposed pretty much in the same manner as the large panther, except that on the haunches it is rather marked with stripes than with spots.

Descending to animals of this kind that are still smaller, we find the Catamountain, which is the Ocelot of M. Buffon, or the Tiger Cat of most of those who exhibit it as a show. It is less than the ounce, but its robe more beautifully variegated. It is an

American animal, and is about two feet and a half in length from the nose to the insertion of the tail. It is extremely like a cat, except that it is larger and slenderer, that its colours are more beautiful, and its tail rather shorter. The fur is of a reddish colour, the whole beautified with black spots and streaks of different figures. They are long on the back, and round on the belly and paws. On the ears are black stripes, which run across, but in other respects they entirely resemble those of a cat. These colours, however, which naturalists have taken great pains minutely to describe, are by no means permanent, being differently disposed in different animals of the same species. I remember to have seen an animal of this size, but whether of this species I will not pretend to say, some years ago, that was entirely brown, and was said also to have come from America.

From this tribe of the cat kind, with spotted skins and a long tail, we come to another with skins diversified in like manner, but with a shorter tail. The principal of these is the Lynx, the name by which the animal was known to Ælian, among the ancients; and to all our old English writers among those of a more modern date. This name has been corrupted by the Portuguese into the word Ouze; and this corruption has been adopted by Ray, who has improperly called this animal the Ounce, after some of the foreign travellers. The first striking distinction between the lynx and all those of the panther kind, is in its tail, which is at least half as short in proportion, and black at the extremity. Its fur is much longer, the spots on the skin less vivid, and but confusedly mingled with the rest. Its ears are much longer, and tipped at the point with a black tuft of hair The colour round the eyes is white, and the physiognomy more placid and gen-

tle. Each hair of this animal is of three different colours: the root is of a grayish brown; the middle red, or of an ash colour; and the ends white. This whiteness at the ends takes up so small a part of the particular hair, that it does not prevent us from seeing the principal colour, which is that in the middle part; so that it only makes the surface of the body appear as if it was silvered over: however, the hair of which the spots consist has no white at the ends, and at the roots it is not quite so black as the other part. This animal is not above the size of the ounce, but is rather stronger built, and it has but twenty-eight teeth; whereas all the rest of the cat kind already mentioned have thirty.

Another animal of this kind is called the Syagush, or, as M. Buffon names it, the Caracal. It is a native of the East Indies, and resembles the lynx in size, in form, and even in the singularity of being tufted at the tips of the ears. However, the syagush differs in not being mottled as the lynx is; its fur, or rather hair, is rougher and shorter, its tail is rather longer, its muzzle more lengthened, its physiognomy more fierce, and its nature more savage.

The third and last animal that need to be mentioned of this kind, is that which M. Buffon calls the Serval, and which he has first described. It is a native of Malabar, resembling the panther in its spots, but the lynx in the shortness of its tail, in its size, and in its strong-built form.

These seem to be all the principal distinctions among animals of the panther kind, from the largest of this tribe down to the domestic cat, which is the smallest of all these fierce and mischievous varieties. In all, their nature seems pretty much the same, being equally fierce, subtle, cruel, and cowardly. The panther, including the leopard and the jaguar, or American panther, as they are the largest, so

1. Caracal _ 2. Striped Hyena _ 3. Spotted Hyena.

also are they the most dangerous of this kind; for the whole race of cats are noxious in proportion to their power to do mischief. They inhabit the most torrid latitudes of India, Africa, and America, and have never been able to multiply beyond the torrid zone. They are generally found in the thickest and the most entangled forests, and often near remote habitations, where they watch to surprise all kinds of domestic animals. They very seldom attack man, even though provoked by him; they rather seem desirous of finding safety by flight, or by climbing trees, at which they are very expert. In this manner also they often pursue their prey; and being expert at seizing it as well above as below, they cause a vast destruction. Of all other animals these are the most sullen, and, even to a proverb, untameable. They still preserve their fierce and treacherous spirit; and at those places where they are exposed to be seen among others, we often observe, that while their keeper is familiar with the lion or the bear, yet he is apprehensive of the large panther, and keeps it bound with the shortest chain.

As the ounce differs from these in figure and size, so also it seems to differ in disposition, being more mild, tractable, and tame. These we frequently see as harmless and innocent as cats; and there is one at present in the Tower, with which the keeper plays without the smallest apprehension. I own I was not a little uneasy, at first, for the man, when he put his hand through the bars, and called the animal by its name; but was a good deal surprised to see the creature, which one might suppose irritated by long confinement, come gently up to him, stroke his hand with its face, in the manner of a cat, and testify the utmost gentleness of disposition. The ounce, therefore, is remarkable for being easily tamed, and, in fact, it is employed all over the East for

the purpose of hunting. Not, indeed, but that panthers themselves are sometimes used for this purpose; but they are never thoroughly subdued like the former, being usually brought to the field in a carriage, and kept chained and caged until they are shown the gazelle or the leveret, which is their prey. This they pursue rather by three or four great springs, than by running. If they seize it by this sudden effort, it finds no mercy; but if it escapes from their first effort, they never attempt to pursue, and appear quite disappointed and confounded at their mischance. It sometimes happens that they are so much enraged at it that they attack even their employer, and his only resource to avoid their fury, is to throw them some small pieces of meat which he has brought with him for that purpose.

The ounce, however, is not so dangerous, and is treated with more confidence and familiarity. It is usually brought to the field hookwinked behind one of the horsemen. When the game appears, the ounce is instantly uncovered, and shown where it lies; upon which the fierce creature darts like an arrow to the place, and seizes it at once, or, missing it, remains motionless on the place. It would be vain to attempt retrieving its disgrace by continuing the pursuit; for although it bounds with greater agility than most other animals, yet it is slow and awkward in running, and has no means of finding the animal it pursues by the smell, as is common among those of the dog kind. From hence, therefore, it appears how much superior the European method of hunting is to that of the Asiatic; since whatever amusement this exercise affords must arise from the continuance of the chase, and from the fluctuation of doubt and expectation, which raise and depress the pursuers by turns. All this an Asiatic hunter is deprived of; and his greatest pleasure can scarcely

be more than what among us is called *coursing*, in which the dog pursues the animal, and keeps it constantly in view.

But it must not be supposed that it is from choice the Asiatics use this method of chase; for no doubt, were dogs serviceable among them, as they are in Europe, they would be employed for the same purposes. But the fact is, that the extreme heat of the tropical climates produces such universal putrefaction, and sends up such various and powerful scents, that dogs are at first bewildered in the chase, and at last come to lose the delicacy of their scent entirely. They are therefore but little used in those warm countries; and what could they avail in places where almost every other animal of the forest is stronger and more rapacious? The lion, the tiger, the panther, and the ounce, are all natural enemies to the dog, and attack him wherever he appears with ungovernable fury. The breed, therefore, in those places, would quickly be destroyed; so that they are obliged to have recourse to those animals which are more fitted to serve them, and thus convert the ounce to those purposes for which dogs are employed in Europe.

The Catamountain, or Ocelot, is one of the fiercest, and, for its size, one of the most destructive animals in the world. It is, as was before observed, a native of South America, and by no means capable of the same education as the ounce, which it more approaches in size than in disposition. Two of these, from whom M. Buffon has taken his description, were brought over from Carthagena, and having been taken from the dam when very young, were afterwards suckled by a bitch. But before they were three months old, they had strength and ingratitude enough to kill and devour their nurse. Their succeeding fierceness and malignity seemed to corres-

pond with their first efforts: for no arts could tame or soften their natures, and while they continued in their cages, they still testified an unceasing disposition for slaughter. When their food was given them, the male always served himself before the female ventured to touch a bit, and it was not till he was satisfied that the other began. In their savage state, these animals are still more destructive: having great strength and agility, they very easily find and overtake their prey, which they pursue among the tops of the trees, as well as on the ground; but what renders them still more mischievous, is their unceasing appetite rather for the blood than the flesh of their prey. They suck this with the greatest avidity, but frequently leave the carcass otherwise untouched, in order to pursue other animals for the blood in like manner. They generally continue on the tops of trees, like our wild cats, where they make their nest, and often bring forth their young. When they spy any animal they can master, and there are but few in the forest but what are inferior, they dart down upon it with inevitable exactness.

The whole tribe of animals of the panther kind, with long tails, are chiefly inhabitants, as was said, of the torrid zone; but those of the short-tailed kind, and particularly the lynx, is principally found in the cold countries that are bordering on the pole. The lynx is chiefly to be met with in the north of Germany, Lithuania, Muscovy, Siberia, and North America. Those of the new continent, however, are rather smaller than in Europe, as is the case with almost all their quadrupeds; they are somewhat whiter also, but in other respects there is scarce any difference to be found among them.* This animal has been called by some *Lupus Cervarius*, or a creature compounded between a wolf and a stag; but for what

* Buffon.

reason is hard to guess; it no way resembles either, in shape or in disposition. In its nature it exactly resembles the cat, except that, being bigger and nearly two feet long, it is bolder and fiercer. Like the cat, it climbs trees, and seeks its prey by surprise; like the cat, it is delicate and cleanly, covering its urine with its paws: and it resembles the wolf in nothing except its cry, which often deceives the hunters, and induces them to think they hear a wolf and not a lynx. This animal, also, is rather more delicate than the cat; and after having once feasted upon its prey, will never return to it again, but hunts the woods for another. From hence may have arisen the common report of the lynx having of all other quadrupeds the shortest memory. This, however is not the only idle story that has been propagated of it: as of its seeing with such perspicuity as to perceive objects through walls and mountains; as of having its urine of such a quality as to harden and become a precious stone; with several others, propagated by ignorance or imposture.

The Syagush and the Serval are both so like all the rest of the cat kind in disposition, that it is but repeating the same account once more to give their distinct history. As the lynx is found only in cold countries, so the syagush is to be met with only in the warm tropical climates. It is used in the same manner as the ounce for hunting; but it seems to have a property which the other has not, namely, that of being able to overtake its prey by pursuing it. Whether this is performed by having a finer scent than the former, or greater swiftness, we are not informed; being only told, that when it overtakes either the gazelle or the antelope, it leaps upon their backs, and getting forward to their shoulders scratches their eyes out, by which means they become an easy prey to the hunters. Some have called

this animal the lion's provider; and it is said that when it calls him to pursue his prey, its voice very much resembles that of one man calling another.* From hence we may conjecture that this animal pursues its prey in full cry, and that the lion only follows to partake or seize the spoil. The same account is given also of the jackall; and very probably it may be true, not only of these animals, but of some others, since it is natural enough to suppose that the lion will pursue whenever he is taught to discover his prey.

We had one of those animals a few years ago sent over from the East Indies, but it was not able to endure the change of climate, and it died in a very short time after it was brought to the Tower. Whether consumed by disease or not I cannot tell, but it seemed to be much slenderer than the cat or the lynx, and its ears were much longer; however, it is a very strong creature for its size, and has been known to kill a large dog in single combat:† nevertheless it is, like all of the cat kind except the lion, remarkable for its cowardice, and will never, except in cases of necessity, attack an animal that is its equal in strength or activity. For this reason, when brought into the field, and put upon a service of danger, it obstinately refuses, and is alert only in the pursuit of animals that are too feeble for resistance, or too timid to exert their strength.

From what has been said of this rapacious tribe, we perceive a similitude in the manners and dispositions of them all, from the lion to the cat. The similitude of their internal conformation is still more exact; the shortness of their intestines, the number of their teeth, and the structure of their paws. The first of this class is the Lion, distinguishable from all the rest by his strength, his magnitude, and his

* Thevenot, vol. ii, p. 114. † Buffon.

mane. The second is the Tiger, rather longer than the lion, but not so tall, and known by the streaks and the vivid beauty of its robe; including also the American tiger or cougar, distinguishable by its size, next that of the tiger, itst awny colour, and its spots. The third is the Panther and the Leopard. The fourth is the Ounce, not so large as any of the former, spotted like them, but distinguishable by the cream-coloured ground of its hair, and the great length of its tail, being above the length of its body. The fifth is the Catamountain or Tiger Cat, less than the ounce, but differing particularly in having a shorter tail, and being streaked down the back like a tiger. The sixth is the short tailed kind, namely, the Lynx, of the size of the former, but with a short tail, streaked, and the tips of its ears tufted with black. The seventh is the Syagush, differing from the lynx in not being mottled like it, in not being so large, and in having the ears longer, though tipped with black, as before. The eighth is the Serval, resembling the lynx in its form, and the shortness of its tail, streaked also like it, but not having the tips of its ears tufted. Lastly, the cat, wild and tame, with all its varieties; all less than any of the former, but, like them, equally insidious, rapacious, and cruel.

This whole race may be considered as the most formidable enemy of mankind: there are others indeed, stronger, but they are gentle, and never offer injury till injured; there are others more numerous, but they are more feeble, and rather look for safety by hiding from man, than opposing him. These are the only quadrupeds that make good their ground against him, and which may be said to keep some kingdoms of the earth in their own possession. How many extensive countries are there in Africa, where the wild beasts are so numerous that man is deterred

from living amongst them, reluctantly giving up to the lion and the leopard extensive tracts, that seem formed only for his delight and convenience!

CHAPTER XVI.

ANIMALS OF THE DOG KIND.

THE second class of carnivorous quadrupeds may be denominated those of the Dog kind.* This class is neither so numerous nor so powerful as the former, and yet neither so treacherous, rapacious, or cowardly. This class may be principally distinguished by their claws, which have no sheath like those of the cat kind, but still continue at the point of each toe, without a capability of being stretched forward or drawn back. The nose also, as well as the jaw, of all the dog kind, is longer than in the cat; the body is, in proportion, more strongly made, and covered with hair instead of fur. There are many internal distinctions also; as in the intestines, which are much longer in the dog kind than in those of the cat; the eye is not formed for night vision; and the olfactory nerves are diffused, in the dog kinds, upon a very extensive membrane within the skull.

If we compare the natural habitudes of this class with the former, we shall find that the dog kinds are not so solitary as those of the cat, but love to hunt in company, and encourage each other with their mu-

* This class of quadrupeds have six fore-teeth in the upper jaw, those in the sides being longer than the intermediate ones, which are lobated; in the under jaw there are likewise six fore-teeth, those on the sides being lobated. They have six grinders in the upper, and seven in the lower jaw. The teeth called *dog-teeth* are four, one on each side, both in the lower and upper jaw; they are sharp-pointed, bent a little inward, and stand at a distance from any of the rest.

tual cries. In this manner the dog and the jackall pursue their prey; and the wolf and fox, which are of this kind, though more solitary and silent among us, yet in countries where less persecuted, and where they can more fearlessly display their natural inclinations, they are found to keep together in packs, and pursue their game with alternate howlings.

Animals of the dog kind want some of the advantages of the cat kind, and yet are possessed of others in which the latter are deficient. Upon observing their claws, it will easily be perceived that they cannot, like cats, pursue their prey up the sides of a tree, and continue the chase among the branches; their unmanageable claws cannot stick in the bark, and thus support the body up along the trunk, as we see the cat very easily perform: whenever, therefore, their prey flies up a tree from them, they can only follow it with their eyes, or watch its motions till hunger again brings it to the ground. For this reason, the proper prey of the dog kind are only those animals that like themselves are unfitted for climbing; the hare, the rabbit, the gazelle, or the roe-buck.

As they are, in this respect, inferior to the cat, so they exceed it in the sense of smelling; by which alone they pursue their prey with certainty of success, wind it through all its mazes, and tire it down by perseverance. It often happens, however, in the savage state, that their prey is either too much diminished, or too wary, to serve for a sufficient supply. In this case, when driven to an extremity, all the dog kinds can live for some time upon fruits and vegetables, which, if they do not please the appetite, at least serve to appease their hunger.

Of all this tribe, the dog has every reason to claim the preference, being the most intelligent of all known quadrupeds, and the acknowledged friend of

mankind. The dog,* independent of the beauty of his form, his vivacity, force, and swiftness, is possessed of all those internal qualifications that can conciliate the affections of man, and make the tyrant a protector. A natural share of courage, an angry and ferocious disposition, renders the dog, in its savage state, a formidable enemy to all other animals: but these readily give way to very different qualities in the domestic dog, whose only ambition seems the desire to please: he is seen to come crouching along, to lay his force, his courage, and all his useful talents, at the feet of his master; he waits his orders, to which he pays implicit obedience; he consults his looks, and a single glance is sufficient to put him in motion; he is more faithful even than the most boasted among men; he is constant in his affections, friendly without interest, and grateful for the slightest favours; much more mindful of benefits received than injuries offered; he is not driven off by unkindness; he still continues humble, submissive, and imploring; his only hope to be serviceable, his only terror to displease; he licks the hand that has been just lifted to strike him, and at last disarms resentment by submissive perseverance.

More docile than man, more obedient than any other animal, he is not only instructed in a short time, but he also conforms to the dispositions and the manners of those who command him. He takes his tone from the house he inhabits; like the rest of the domestics, he is disdainful among the great, and churlish among clowns. Always assiduous in serving his master, and only a friend to his friends, he is indifferent to all the rest, and declares himself openly against such as seem to be dependent like himself. He knows a beggar by his clothes, by his

* The rest of this description of the dog is taken from M. Buffon: what I have added, is marked as before.

voice, or his gestures, and forbids his approach. When at night the guard of the house is committed to his care, he seems proud of the charge; he continues a watchful sentinel, he goes his rounds, scents strangers at a distance, and gives them warning of his being upon duty. If they attempt to break in upon his territories, he becomes more fierce, flies at them, threatens, fights, and either conquers alone, or alarms those who have most interest in coming to his assistance: however, when he has conquered, he quietly reposes upon the spoil, and abstains from what he has deterred others from abusing; giving thus at once a lesson of courage, temperance, and fidelity.

From hence we see of what importance this animal is to us in a state of nature. Supposing, for a moment, that the species had not existed, how could man, without the assistance of the dog, have been able to conquer, tame, and reduce to servitude every other animal? How could he discover, chase, and destroy, those that were noxious to him? In order to be secure, and to become master of all animated nature, it was necessary for him to begin by making a friend of a part of them; to attach such of them to himself, by kindness and caresses, as seemed fittest for obedience and active pursuit. Thus the first art employed by man was in conciliating the favour of the dog; and the fruits of this art were, the conquest and peaceable possession of the earth.

The generality of animals have greater agility, greater swiftness, and more formidable arms, from nature, than man; their senses, and particularly that of smelling, are far more perfect: the having gained, therefore, a new assistant, particularly one whose scent is so exquisite as that of the dog, was the gaining a new sense, a new faculty, which before was wanting. The machines and instruments which we

have imagined for perfecting the rest of the senses, do not approach to that already prepared by nature, by which we are enabled to find out every animal, though unseen, and thus destroy the noxious, and use the serviceable.

The dog, thus useful in himself, taken into a participation of empire, exerts a degree of superiority over all animals that require human protection. The flock and the herd obey his voice more readily even than that of the shepherd or the herdsman; he conducts them, guards them, keeps them from capriciously seeking danger, and their enemies he considers as his own. Nor is he less useful in the pursuit: when the sound of the horn, or the voice of the huntsman, calls him to the field, he testifies his pleasure by every little art, and pursues with perseverance those animals which, when taken, he must not expect to divide. The desire of hunting is indeed natural to him as well as to his master, since war and the chase are the only employment of savages. All animals that live upon flesh hunt by nature; the lion and the tiger, whose force is so great that they are sure to conquer, hunt alone, and without art; the wolf, the fox, and the wild dog, hunt in packs, assist each other, and partake the spoil. But when education has perfected this talent in the domestic dog, when he has been taught by man to repress his ardour, to measure his motions, and not to exhaust his force by too sudden an exertion of it, he then hunts with method, and always with success.

Although the wild dog, such as he was before he came under the protection of mankind, is at present utterly unknown, no such animal being now to be found in any part of the world, yet there are many that, from a domestic state, have turned savage, and entirely pursue the dictates of nature." In those de-

serted and uncultivated countries where the dog is found wild, they seem entirely to partake of the disposition of the wolf; they unite in large bodies, and attack the most formidable animals of the forest, the couguar, the panther, and the bison. In America, where they were originally brought by the Europeans, and abandoned by their masters, they have multiplied to such a degree, that they spread in packs over the whole country, attack all other animals, and even man himself does not pass without insult. They are there treated in the same manner as all other carniverous animals, and killed wherever they happen to come: however, they are easily tamed; when taken home, and treated with kindness and lenity, they quickly become submissive and familiar, and continue faithfully attached to their masters. Different in this from the wolf or the fox, who, though taken never so young, are gentle only while cubs, and, as they grow older, give themselves up to their natural appetites of rapine and cruelty. In short, it may be asserted, that the dog is the only animal whose fidelity is unshaken; the only one who knows his master, and the friends of the family; the only one who instantly distinguishes a stranger, the only one who knows his name, and answers to the domestic call, the only one who seems to understand the nature of subordination, and seeks assistance; the only one who, when he misses his master, testifies his loss by his complaints; the only one who, carried to a distant place, can find the way home; the only one whose natural talents are evident, and whose education is always successful.

In the same manner, as the dog is of the most complying disposition, so also is it the most susceptible of change in its form; the varieties of this animal being too many for even the most careful describer to mention. The climate, the food, and the

education all make strong impressions upon the animal, and produce alterations in its shape, its colour, its hair, its size, and in every thing but its nature. The same dog, taken from one climate, and brought to another, seems to become another animal; but different breeds are as much separated, to all appearance, as any two animals the most distinct in nature. Nothing appears to continue constant with them, but their internal conformation; different in the figure of the body, in the length of the nose, in the shape of the head, in the length and the direction of the ears and tail, in the colour, the quality, and the quantity of the hair; in short, different in every thing but that make of the parts which serve to continue the species, and keep the animal distinct from all others. It is this peculiar conformation, this power of producing an animal that can reproduce, that marks the kind, and approximates forms that at first sight seem never made for conjunction.

From this single consideration, therefore, we may at once pronounce all dogs to be of one kind; but which of them is the original of all the rest, which of them is the savage dog from whence such a variety of descendants have come down, is no easy matter to determine. We may easily indeed observe, that all those animals which are under the influence of man, are subject to great variations. Such as have been sufficiently independent, so as to choose their own climate, their own nourishment, and to pursue their own habitudes, preserve the original marks of nature without much deviation; and it is probable, that the first of these is even at this day very well represented in their descendants. But such as man has subdued, transported from one climate to another, controlled in their manner of living and their food, have most probably been changed also in their forms: particularly the dog has felt these alte-

rations more strongly than any other of the domestic kinds; for, living more like man, he may be thus said to live more irregularly also, and, consequently, must have felt all those changes that such variety would naturally produce. Some other causes also may be assigned for this variety in the species of the dog: as he is perpetually under the eye of his master, when accident has produced any singularity in its productions, man uses all his art to continue this peculiarity unchanged, either by breeding from such as had those singularities, or by destroying such as happened to want them; besides, as the dog produces much more frequently than some other animals, and lives a shorter time, so the chance for its varieties will be offered in greater proportion.

But which is the original animal, and which the artificial or accidental variety, is a question, which, as was said, is not easily resolved. If the internal structure of dogs of different sorts be compared with each other, it will be found, except in point of size, that in this respect they are exactly the same. This, therefore, affords no criterion. If other animals be compared with the dog internally, the wolf and the fox will be found to have the most perfect resemblance; it is probable, therefore, that the dog which most nearly resembles the wolf or the fox externally, is the original animal of its kind; for it is natural to suppose, that as the dog most nearly resembles them internally, so he may be near them in external resemblance also, except where art or accident has altered his form. This being supposed, if we look among the number of varieties to be found in the dog, we shall not find one so like the wolf or the fox, as that which is called the Shepherd's Dog. This is that dog with long coarse hair on all parts except the nose, pricked ears, and a long nose, which is common enough among us, and receives his name

from being principally used in guarding and attending on sheep. This seems to be the primitive animal of his kind; and we shall be the more confirmed in this opinion, if we attend to the different characters which climate produces in the animal, and the different races of dogs which are propagated in every country. And, in the first place, if we examine those countries which are still savage, or but half civilized, where it is most probable the dog, like his master, has received but few impressions from art, we shall find the shepherd's dog, or one very like him, still prevailing amongst them. The dogs that have run wild in America, and in Congo, approach this form. The dog of Siberia, Lapland, and Iceland, of the Cape of Good Hope, of Madagascar, Madura, Calicut, and Malabar, have all a long nose, pricked ears, and resemble the shepherd's dog very nearly. In Guinea, the dog very speedily takes this form; for, at the second or third generation, the animal forgets to bark, his ears and his tail become pointed, and his hair drops off, while a coarser, thinner kind comes in the place. This sort of dog is also to be found in the temperate climates in great abundance, particularly among those who, preferring usefulness to beauty, employ an animal that requires very little instruction to be serviceable. Notwithstanding this creature's deformity, his melancholy and savage air, he is superior to all the rest of his kind in instinct; and, without any teaching, naturally takes to tending flocks, with an assiduity and vigilance that at once astonishes, and yet relieves his master.

In more polished and civilized places, the dog seems to partake of the universal refinement; and, like the men, becomes more beautiful, more majestic, and more capable of assuming an education foreign to his nature. The dogs of Albania, of Greece, of Denmark, and of Ireland, are larger and stronger

Engd by G. B. Ellis

1. Bull Dog — 2. Pug Dog — 3. Shepherds Dog
4. Domestic Cat — 5. Greyhound — 6. Wild Cat

than those of any other kind. In France, Germany, Spain, and Italy, the dogs are of various kinds, like the men; and this variety seems formed by crossing the breed of such as are imported from various climates.

The shepherd's dog may, therefore, be considered as the primitive stock from whence these varieties are all derived. He makes the stem of that genealogical tree which has been branched out into every part of the world. This animal still continues pretty nearly in its original state among the poor in temperate climates; being transported into the colder regions, he grows less and more ugly among the Laplanders, but becomes more perfect in Iceland, Russia, and Siberia, where the climate is less rigorous, and the people more civilized. Whatever differences there may be among the dogs of these countries, they are not very considerable, as they have all straight ears, long and thick hair, a savage aspect, and do not bark either so often or so loud as dogs of the more cultivated kind.

The shepherd's dog, transported into the temperate climates, and among people entirely civilized, such as England, France, and Germany, will be devested of his savage air, his pricked ears, his rough, long, and thick hair, and, from the single influence of climate and food alone, will become either a matin, a mastiff, or a hound. These three seem the immediate descendants of the former; and from them the other varieties are produced.

The Hound, the Harrier, and the Beagle, seem of all the same kind; for although the bitch is covered but by one of them, yet in her litters are found puppies resembling all the three. This animal, transported into Spain or Barbary, where the hair of all quadrupeds becomes soft and long, will be there con-

verted into the land spaniel, and the water spaniel, and these of different sizes.

The Grey Matin Hound, which is in the second branch, transported to the North, becomes the Great Danish Dog; and this, sent into the South, becomes the greyhound, of different sizes. The same transported into Ireland, the Ukraine, Tartary, Epirus, and Albania, becomes the great wolf-dog, known by the name of the Irish wolf-dog.

The Mastiff, which is the third branch, and chiefly a native of England, when transported into Denmark, becomes the little Danish dog; and this little Danish dog, sent into the tropical and warm climates, becomes the animal called the Turkish dog, without hair. All these races, with their varieties, are produced by the influence of climate, joined to the different food, education, and shelter, which they have received among mankind. All other kinds may be considered as mongrel races, produced by the concurrence of these, and found rather by crossing the breed than by attending to the individual. "As these are extremely numerous, and very different in different countries, it would be almost endless to mention the whole; besides, nothing but experience can ascertain the reality of these conjectures, although they have so much the appearance of probability; and until that gives more certain information, we must be excused from entering more minutely into the subject.

"With regard to the dogs of our country in particular, the varieties are very great, and the number every day increasing. And this must happen in a country so open by commerce to all others, and where wealth is apt to produce capricious predilection. Here, the ugliest and the most useless of their kinds will be entertained merely for their singularity; and being imported only to be looked at,

they will loose even that small degree of sagacity which they possessed in their natural climates. From this importation of foreign useless dogs, our own native breed is, I am informed, greatly degenerated; and the varieties now to be found in England much more numerous than they were in the times of Queen Elizabeth, when Dr. Caius attempted their natural history. Some of those he mentions are no longer to be found among us, although many have since been introduced, by no means so serviceable as those which have been suffered to decay.

"He divides the whole race into three kinds. The first is, the generous kind, which consists of the terrier, the harrier, and the blood-hound; the gaze-hound, the greyhound, the leymmer, and the tumbler; all these are used for hunting. Then the spaniel, the setter, and the water spaniel, or finder, were used for fowling; and the spaniel gentle, or lap-dog, for amusement. The second is the farm kind, consisting of the shepherd's dog and the mastiff. And the third is the mongrel kind; consisting of the wappe, the turnspit, and the dancer. To these varieties we may add, at present, the bull-dog, the Dutch mastiff, the harlequin, the pointer, and the Dane, with a variety of lap-dogs, which, as they are perfectly useless, may be considered as unworthy of a name.

"The Terrier is a small kind of hound,* with rough hair, made use of to force the fox or the badger out of their holes; or rather to give notice, by their barking, in what part of their kennel the fox or badger resides, when the sportsmen intend to dig them out.

"The Harrier, as well as the beagle and the fox-hound, are used for hunting; of all other animals, they have the quickest and most distinguishing sense of smelling. The properly breeding, matching, and

* British Zoology.

training these, makes up the business of many men's lives.

"The blood-hound was a dog of great use, and in high esteem among our ancestors. Its employ was to recover any game that had escaped from the hunter, or had been killed, and stolen out of the forest. But it was still more employed in hunting thieves and robbers by their footsteps. At that time, when the country was less peopled than at present, and when, consequently, the footsteps of one man were less crossed and obliterated by those of others, this animal was very serviceable in such pursuits; but at present, when the country is every where peopled, this variety is quite worn out; probably because it was found of less service than formerly.

"The Gaze-hound hunted, like our greyhounds, by the eye, and not by the scent. It chased indifferently the fox, hare, or buck. It would select from the herd the fattest and fairest deer, pursue it by the eye, and if lost recover it again with amazing sagacity. This species is now lost or unknown among us.

"The Greyhound is very well known at present, and was formerly held in such estimation, that it was the pecular companion of a gentleman; who, in the times of semi-barbarism, was known by his horse, his hawk, and his greyhound. Persons under a certain rank of life are forbidden, by some late game-laws, from keeping this animal; wherefore, to disguise it the better, they cut off its tail.

"The Leymmer is a species now unknown to us. It hunted both by scent and sight, and was led in a leyme or thong, from whence it received its name.

"The tumbler was less than the hound, more scraggy, and had pricked ears; so that by the description it seems to answer to the modern lurcher. This took its prey by mere cunning, depending nei-

ther on the goodness of its nose nor its swiftness. If it came into a warren, it neither barked nor ran on the rabbits; but, seemingly inattentive, approached sufficiently near till it came within reach, and then seized them by a sudden spring.

"The Land Spaniel, which probably had its name from Spain, where it might have acquired the softness of its hair, is well known at present. There are two varieties of this kind: namely, the Slater, used in hawking to spring the game, and the Setter, that crouches down when it scents the birds, till the net be drawn over them. I have read somewhere that the famous poet, Lord Surry, was the first who taught dogs to set; it being an amusement to this day only known in England.

"The Water Spaniel was another species used in fowling. This seems to be the most docile of all the dog kind; and this docility is particularly owing to his natural attachment to man. Many other kinds will not bear correction; but this patient creature, though very fierce to strangers, seems unalterable in his affections, and blows and ill usage seem only to increase his regard.

"The Lap-dog, at the time of Doctor Caius, was of Maltese breed; at present it comes from different countries: in general, the more awkward or extraordinary these are, the more they are prized.

"The Shepherd's Dog has been already mentioned; and as for the Mastiff, he is too common to require a description. Doctor Caius tells us that three of these were reckoned a match for a bear, and four for a lion. However, we are told that three of them overcame a lion in the time of King James the First; two of them being disabled in the combat, the third obliged the lion to seek for safety by flight.

"As to the last division, namely, of the Wappe, the Turnspit, and the Dancer, these were mongrels,

of no certain shape, and made use of only to alarm the family, or, being taught a variety of tricks, were carried about as a show.

"With regard to those of later importation, the Bull-dog, as M. Buffon supposes, is a breed between the small Dane and the English mastiff. The large Dane is the tallest dog that is generally bred in England. It is somewhat between a mastiff and a greyhound in shape, being more slender than the one, and much stronger than the other. They are chiefly used rather for show than service, being neither good in the yard nor the field. The highest are most esteemed; and they generally cut off their ears to improve their figure, as some absurdly suppose. The Harlequin is not much unlike the small Dane, being an useless animal, somewhat between an Italian greyhound and a Dutch mastiff. To these several others might be added, such as the pug-dog, the black breed, and the pointer; but, in fact, the varieties are so numerous, as to fatigue even the most ardent curiosity."

[It is not certain whether the Newfoundland Dog be a distinct breed: most of them are curs, with a cross of the mastiff; some will, and others will not take the water. They have always been remarked for sagacity, and attachment to their masters.]

Of those of the foreign kinds, I shall mention only three, which are more remarkable than any of the rest. The Lion Dog greatly resembles that animal, in miniature, from whence it takes the name. The hair of the fore part of its body is extremely long, while that of the hinder part is as short. The nose is short, the tail long, and tufted at the point, so that in all these particulars it is entirely like the lion. However, it differs very much from that fierce animal in nature and disposition, being one of the smallest animals of its kind, extremely feeble, timid, and inactive. It comes originally from Malta, where it is

found so small, that women carry it about in their sleeves.

That animal falsely called the Turkish Dog, differs greatly from the rest of the kind, in being entirely without hair. The skin, which is perfectly bare, is of a flesh colour, with brown spots; and their figure at first view is rather disgusting. These seem to be of the small Danish breed, brought into a warm climate, and there, by a succession of generations, devested of their hair. For this reason, they are extremely chilly, and unable to endure the cold of our climate; and even in the midst of summer they continue to shiver as we see men in a frosty day. Their spots are brown, as was said, well marked, and easily distinguishable in summer, but in the cold of winter they entirely disappear. They are called the Turkish breed, although brought from a much warmer climate; for some of them have been known to come from the warmest parts of Africa and the East Indies.

"The last variety, and the most wonderful of all that I shall mention, is the Great Irish Wolf Dog, that may be considered as the first of the canine species. This animal, which is very rare even in the only country in the world where it is to be found, is rather kept for show than use, their being neither wolves nor any other formidable beasts of prey in Ireland, that seem to require so powerful an antagonist. The wolf dog is therefore bred up in the houses of the great, or such gentlemen as choose to keep him as a curiosity, being neither good for hunting the hare, the fox, or the stag, and equally unserviceable as a house dog. Nevertheless, he is extremely beautiful and majestic to appearance, being the greatest of the dog kind to be seen in the world. The largest of those I have seen, and I have seen above a dozen, was about four feet high, or as tall as a calf of a year old. He was made extremely

like a greyhound, but rather more robust, and inclining to the figure of the French matin, or the great Dane. His eye was mild, his colour white, and his nature seemed heavy and phlegmatic. This I ascribed to his having been bred up to a size beyond his nature: for we see in man, and all other animals, that such as are overgrown are neither so vigorous nor alert as those of a more moderate stature. The greatest pains have been taken with these to enlarge the breed, both by food and matching. This end was effectually obtained, indeed, for the size was enormous; but, as it seemed to me, at the expense of the animal's fierceness, vigilance, and sagacity. However, I was informed otherwise; the gentleman who bred them assuring me, that a mastiff would be nothing when opposed to one of them, who generally seized their antagonist by the back: he added, that they would worry the strongest bulldogs, in a few minutes, to death. But this strength did not appear either in their figure or their inclinations; they seemed rather more timid than the ordinary race of dogs; and their skin was much thinner, and consequently less fitted for combat. Whether with these disadvantages they were capable, as I was told, of singly coping with bears, others may determine; however, they have but few opportunities, in their own country, of exerting their strength, as all

ears should be dependant, and fluctuate as she runs.* This, however, is by no means the case with the Irish wolf dog, whose ears resemble those of the greyhound, and are far from fluctuating with the animal's motions. But of whatever kinds these dogs may be, whether known among the ancients, or whether produced by a later mixture, they are now almost quite worn away, and are very rarely to be met with even in Ireland. If carried to other countries, they soon degenerate; and even at home, unless great care be taken, they quickly alter. They were once employed in clearing the island of wolves, which infested it in great plenty; but these being destroyed, the dogs also are wearing away, as if nature meant to blot out the species when they had no longer any services to perform.

"In this manner several kinds of animals fade from the face of nature, that were once well known but are now seen no longer. The enormous elk of the same kingdom, that, by its horns, could not have been less than eleven feet high, the wolf, and even the wolf dog, are extinct, or only continued in such a manner as to prove their former plenty and existence. From hence it is probable that many of the nobler kinds of dogs, of which the ancients have given us such beautiful descriptions, are now utterly unknown; since among the whole breed we have not one that will venture to engage the lion or the tiger in single combat. The English bull-dog is perhaps the bravest of the kind; but what are his most boasted exploits to those mentioned of the Epirotic dogs by Pliny, or the Indian dogs by Ælian? The latter gives us a description of a combat between a dog and a lion, which I will take leave to translate.

* Elige tunc cursu facilem, facilemque recursu,
In Lacedæmonio natam seu rure Molosso—
Renibus ampla satis validis, diductaque coxas
Cuique nimis molles fluitent in cursibus aures.—NEMESIAN.

"When Alexander was pursuing his conquests in India, one of the principal men of that country was desirous of showing him the value of the dogs which his country produced. Bringing his dog into the king's presence, he ordered a stag to be let loose before him, which the dog despising as an unworthy enemy remained quite regardless of the animal, and never once stirred from his place. His master then ordered a wild boar to be set out; but the dog thought even this a despicable foe, and remained calm and regardless as before. He was next tried with a bear: but still despising his enemy, he only waited for an object more worthy of his courage and his force. At last they brought forth a tremendous lion, and then the dog acknowledged his antagonist, and prepared for combat. He instantly discovered a degree of ungovernable ardour; and flying at the lion with fury, seized him by the throat, and totally disabled him from resistance. Upon this the Indian, who was desirous of surprising the king, and knowing the constancy and bravery of his dog, ordered his tail to be cut off; which was easily performed, as the bold animal was employed in holding the lion. He next ordered one of his legs to be broken; which, however, did not in the least abate the dog's ardour, but he still kept his hold as before. Another leg was then broken; but the dog, as if he had suffered no pain, only pressed the lion still the more. In this cruel manner, all his legs were cut off, without abating his courage; and at last, when even his head was separated from his body, the jaws seemed to keep their former hold. A sight so cruel did not fail to affect the king with very strong emotions, at once pitying the dog's fate, and admiring his fortitude. Upon which the Indian, seeing him thus moved, presented him with four dogs of the same kind, which in some measure alleviated his uneasiness for the loss of the former.

"The breed of dogs, however, in that country, is at present very much inferior to what this story seems to imply; since in many places, instead of dogs, they have animals of the cat kind for hunting. In other places also, this admirable and faithful animal, instead of being applied to his natural uses, is only kept to be eaten. All over China there are dog butchers, and shambles appointed for selling their flesh. In Canton, particularly, there is a street appointed for that purpose; and what is very extraordinary, wherever a dog butcher appears, all the dogs of the place are sure to be in full cry after him; they know their enemy, and persecute him as far as they are able." Along the coasts of Guinea, their flesh is esteemed a delicacy by the Negroes; and they will give one of their cows for a dog. But, among this barbarous and brutal people, scarcely any thing that has life comes amiss; and they may well take up with a dog, since they consider toads, lizards, and even the flesh of the tiger itself as a dainty. It may perhaps happen that the flesh of this animal, which is so indifferent in the temperate climates, may assume a better quality in those which are more warm; but it is more than probable that the diversity is rather in man than in the flesh of the dog; since in the cold countries the flesh is eaten with equal appetite by the savages, and they have their dog feasts in the same manner as we have ours for venison.

In our climate, the wild animals that most approach the dog are the wolf and the fox: these in their internal conformation greatly resemble each other, and yet in their natures are very distinct. The ancients asserted that they bred together; and I am assured by credible persons, that there are many animals in this country bred between a dog and a fox. However, all the endeavours of M. Buffon to

make them engender, as he assures us, were ineffectual. For this purpose, he bred up a young wolf, taken in the woods at two months old, with a matin dog of the same age. They were shut up together, without any other, in a large yard, where they had a shelter for retiring. They neither of them knew any other individual of their kind, nor even any other man but he who had the charge of feeding them. In this manner they were kept for three years; still with the same attention, and without constraining or tying them up. During the first year the young animals played with each other continually, and seemed to love each other very much. In the second year they began to dispute about their victuals; although they were given more than they could use. The quarrel always began on the wolf's side. They were brought their food which consisted of flesh and bones, upon a large wooden platter, which was laid on the ground. Just as it was put down, the wolf, instead of falling to the meat, began by driving off the dog; and took the platter in his teeth so expertly, that it let nothing of what it contained fall upon the ground, and in this manner carried it off; but as the wolf could not entirely escape, it was frequently seen to run with the platter round the yard five or six times, still carrying it in a position that none of its contents could fall. In this manner it would continue running, only now and then stopping to take breath, until the dog coming up, the wolf would leave the victuals to attack him. The dog, however, was the stronger of the two; but as it was more gentle, in order to secure him from the wolf's attack, he had a collar put round his neck. In the third year; the quarrels of these ill-paired associates were more vehement, and their combats more frequent; the wolf, therefore, had a collar put about its neck, as well as the dog, who began to be

more fierce and unmerciful. During the two first years, neither seemed to testify the least tendency towards engendering; and it was not till the end of the third, that the wolf, which was the female, showed the natural desire; but without abating either in its fierceness or obstinacy. This appetite rather increased than repressed their mutual animosity; they became every day more intractable and ferocious, and nothing was heard between them but the sounds of rage and resentment. They both, in less than three weeks, became remarkably lean, without ever approaching each other, but to combat. At length their quarrels became so desperate, that the dog killed the wolf, who was become more weak and feeble; and he was soon after himself obliged to be killed, for upon being set at liberty he instantly flew upon every animal he met, fowls, dogs, and even men themselves, not escaping his savage fury.

The same experiment was tried upon foxes, taken young, but with no better success; they were never found to engender with dogs, and our learned naturalist seems to be of opinion, that their natures are too opposite ever to provoke mutual desire. One thing, however, must be remarked, that the animals on which he tried his experiments were rather too old when taken, and had partly acquired their natural savage appetites, before they came into his possession. The wolf, as he acknowledges, was two or three months old before it was caught, and the foxes were taken in traps. It may, therefore, be easily supposed, that nothing could ever after thoroughly tame those creatures, that had been suckled in the wild state, and had caught all the habitudes of the dam. I have seen these animals, when taken earlier in the woods, become very tame; and, indeed, they rather were displeasing by being too familiar than too shy. It were to be wished that the experi-

ment were tried upon such as these; and it is more than probable that it would produce the desired success. Nevertheless, these experiments are sufficient to prove that neither the wolf nor the fox are of the same nature with the dog, but each of a species perfectly distinct, and their joint produce most probably unfruitful.

The dog, when first whelped, is not a completely finished animal. In this kind, as in all the rest which bring forth many at a time, the young are not so perfect as in those which bring forth only one or two. They are always produced with the eyes closed, the lids being held together, not by sticking, but by a kind of thin membrane, which is torn as soon as the upper eye-lid becomes strong enough to raise it from the under. In general their eyes are not opened till ten or twelve days old. During that time, the bones of the scull are not completed, the body is puffed up, the nose is short, and the whole form but ill sketched out. In less than a month, the puppy begins to use all its senses; and from thence, makes hasty advances to its perfection. At the fourth month the dog loses some of his teeth, as in other animals, and these are renewed by such as never fall. The number of these amount to forty-two, which is twelve more than is found in any of the cat kind, which are known never to have above thirty. The teeth of the dog, being his great and only weapon, are formed in a manner much more serviceable than those of the former; and there is scarce any quadruped that has a greater facility in rending, cutting, or chewing its food. He cuts with his incisors or fore-teeth, he holds with his four great canine teeth, and he chews his meat with his grinders; these are fourteen in number, and so placed, that, when the jaws are shut, there remains a distance between them, so that the dog, by opening his mouth ever so wide, does not

lose the power of his jaws. But it is otherwise in the cat kind, whose incisors or cutting teeth are very small, and whose grinding teeth, when brought together, touch more closely than those of the dog, and consequently have less power. Thus, for instance, I can squeeze any thing more forcibly between my thumb and fore-finger, where the distance is greater, than between any other two fingers, whose distance from each other is less.

This animal is capable of reproducing at the age of twelve months,* goes nine weeks with young, and lives to about the age of twelve. Few quadrupeds are less delicate in their food; and yet there are many kind of birds which the dog will not venture to touch. He is even known, although in a savage state, to abstain from injuring some which one might suppose he had every reason to oppose. The dogs and the vultures which live wild about Grand Cairo in Egypt, (for the Mahometan law has expelled this useful animal from human society,) continue together in a very sociable and friendly manner.† As they are both useful in devouring such carcasses as might otherwise putrefy, and thus infect the air, the inhabitants supply them with provisions every day, in order to keep them near the city. Upon these occasions the quadrupeds and birds are often seen together tearing the same piece of flesh, without the least enmity; on the contrary, they are known to live together with a kind of affection, and bring up their young in the same nest.

Although the dog is a voracious animal, yet he

* To this description I will beg leave to add a few particulars from Linnæus, as I find them in the original. "Vomitua, gramina purgatur: cacat supra lapidem. Album græcum antisepticum summum. Mingit ad latus (this however, not till the animal is nine months old) cum hospite sæpe centies. Odorat anum alterius. Procis rixantibus crudelis. Menstruans coit cum variis. Mordet illa illos. Cohæret copula junctus."

† Hasselquist, Iter Palæstin. p. 232.

can bear hunger for a very long time. We have an instance in the Memoirs of the Academy of Sciences of this kind, in which a bitch that had been forgotten in a country-house, lived forty days, without any other nourishment than the wool of a quilt which she had torn in pieces. It should seem that water is more necessary to the dog than food; he drinks often, though not abundantly; and it is commonly believed, that when abridged in water, he runs mad. This dreadful malady, the consequences of which are so well known, is the greatest inconvenience that results from the keeping this faithful domestic. But it is a disorder by no means so frequent as the terrors of the timorous would suppose: the dog has been often accused of madness, without a fair trial; and some persons have been supposed to receive their deaths from his bite, when either their own ill-grounded fears, or their natural disorders, were the true cause.

THE WOLF.

THE Dog and the Wolf are so very much alike internally, that the most expert anatomists can scarcely perceive the difference; and it may be asserted also, that, externally, some dogs more nearly resemble the wolf than they do each other. It was this strong similitude that first led some naturalists to consider them as the same animal, and to look upon the wolf as the dog in its state of savage freedom: however, this opinion is entertained no longer; the natural antipathy those two animals bear to each other, the longer time which the wolf goes with young than the dog, the one going over a hundred, days, and the other not quite sixty; the longer period of life in the former than the latter, the wolf living twenty years,

1. *Rabbit* – 2. *Hare* – 3. *Fox* – 4. *Wolf*.

the dog not fifteen; all sufficiently point out a distinction, and draw a line that must for ever keep them asunder.

The Wolf, from the tip of the nose to the insertion of the tail, is about three feet seven inches long, and about two feet five inches high; which shows him to be larger than our great breed of mastiffs, which are seldom found to be above three feet by two. His colour is a mixture of black, brown, and gray, extremely rough and hard, but mixed towards the roots with a kind of ash-coloured fur. In comparing him to any of our well known breed of dogs, the great Dane, or mongrel greyhound, for instance, he will appear to have the legs shorter, the head larger, the muzzle thicker, the eyes smaller, and more separated from each other, and the ears shorter and straighter. He appears in every respect stronger than the dog; and the length of his hair contributes still more to his robust appearance. The feature which principally distinguishes the visage of the wolf from that of the dog, is the eye, which opens slantingly upwards, in the same direction with the nose; whereas, in the dog, it opens more at right angles with the nose, as in man. The tail also, in this animal, is long and bushy; and he carries it rather more between his hind-legs than the dog is seen to do. The colour of the eye-balls in the wolf is of a fiery green: this gives his visage a fierce and formidable air, which his natural disposition does by no means contradict.*

The wolf is one of those animals whose appetite for animal food is the most vehement, and whose means of satisfying this appetite are the most various. Nature has furnished him with strength, cunning,

* The rest of this history of the wolf is taken from M. Buffon: and I look upon it as a complete model for natural history. If I add or differ, I mark it as usual.

agility, and all those requisites which fit an animal for pursuing, overtaking, and conquering its prey; and yet, with all these, the wolf most frequently dies of hunger, for he is the declared enemy of man. Being long proscribed, and a reward offered for his head, he is obliged to fly from human habitations, and to live in the forest, where the few wild animals to be found there escape him either by their swiftness or their art; or are supplied in too small a proportion to satisfy his rapacity. He is naturally dull and cowardly; but frequently disappointed, and as often reduced to the verge of famine, he becomes ingenious from want, and courageous from necessity. When pressed with hunger, he braves danger, and comes to attack those animals which are under the protection of man, particularly such as he can readily carry away; lambs, sheep, or even dogs themselves, for all animal food becomes then equally agreeable. When this excursion has succeeded, he often returns to the charge, until having been wounded, or hard pressed by the dogs or the shepherds, he hides himself by day in the thickest coverts, and only ventures out at night: he then sallies forth over the country, keeps peering round the villages, carries off such animals as are not under protection, attacks the sheep-folds, scratches up and undermines the thresholds of doors where they are housed, enters furious, and destroys all before he begins to fix upon and carry off his prey. When these sallies do not succeed, he then returns to the thickest part of the forest, content to pursue those smaller animals, which even when taken, afford him but a scanty supply. He there goes regularly to work, follows by the scent, opens to the view, still keeps following, hopeless himself of overtaking the prey, but expecting that some other wolf will come in to his assistance, and then content to share the spoil. At last, when his neces-

sities are very urgent, he boldly faces certain destruction, he attacks women and children, and sometimes ventures even to fall upon men, becomes furious by his continual agitations, and ends his life in madness.

The wolf, as well externally as internally, so nearly resembles the dog, that he seems modelled upon the same plan; and yet he only offers the reverse of the model. If his form be like, his nature is so different, that he only preserves the ill qualities of the dog, without any of his good ones. Indeed, they are so different in their dispositions, that no two animals can have a more perfect antipathy to each other. A young dog shudders at the sight of a wolf; he even shuns his scent, which, though unknown, is so repugnant to his nature, that he comes trembling to take protection near his master. A dog who is stronger, and who knows his strength, bristles up at the sight, testifies his animosity, attacks him with courage, endeavours to put him to flight, and does all in his power to rid himself of a presence that is hateful to him. They never meet without either flying or fighting: fighting for life and death, and without mercy on either side. If the wolf is the stronger, he tears and devours his prey: the dog, on the contrary, is more generous, and contents himself with his victory; he does not seem to think that *the body of a dead enemy smells well;* he leaves him where he falls, to serve as food for birds of prey, or for other wolves, since they devour each other; and when one wolf happens to be desperately wounded, the rest track him by his blood, and are sure to show him no mercy.

The dog, even in his savage state, is not cruel; he is easily tamed, and continues firmly attached to his master. The wolf, when taken young, becomes tame, but never has an attachment: nature is stronger in

him than education; he resumes, with age, his natural dispositions, and returns, as soon as he can, to the woods from whence he was taken. Dogs, even of the dullest kinds, seek the company of other animals; they are naturally disposed to follow and accompany other creatures besides themselves; and even by instinct, without any education, take to the care of flocks and herds. The wolf, on the contrary, is the enemy of all society; he does not even keep much company with those of his kind. When they are seen in packs together, it is not to be considered as a peaceful society, but a combination for war: they testify their hostile intentions by their loud howlings, and by their fierceness discover a project for attacking some great animal, such as a stag or a bull, or to destroy some more redoubtable watch-dog. The instant their military expedition is completed, their society is at an end; they then part, and each returns in silence to his solitary retreat. There is not even any strong attachments between the male and female; they seek each other only once a-year, and remain but a few days together: they always couple in winter; at which time several males are seen following one female, and this association is still more bloody than the former: they dispute most cruelly, growl, bark, fight, and tear each other; and it sometimes happens that the majority kill the wolf which has been chiefly preferred by the female. It is usual for the she-wolf to fly from them all with him she has chosen; and she watches this opportunity when the rest are asleep.

The season for coupling does not continue above twelve or fifteen days; and usually commences among the oldest, those which are young being later in their desires. The males have no fixed time for engendering; they pass from one female to the other, beginning at the end of December, and ending at the

latter end of February. The time of pregnancy is about three months and a half; and the young wolves are found from the latter end of April to the beginning of July. The long continuance of the wolf's pregnancy is sufficient to make a distinction between it and the dog; did not also the fiery fierceness of the eyes, the howl instead of barking, and the greater duration of its life, leave no doubt of its being an animal of its own particular species. In other respects, however, they are entirely alike; the wolf couples exactly like the dog, the parts are formed in the same manner, and their separation hindered by the same cause. When the she-wolves are near their time of bringing forth, they seek some very tufted spot, in the thickest part of the forest: in the middle of this they make a small opening, cutting away the thorns and briars with their teeth, and afterwards carry thither a great quantity of moss, which they form into a bed for their young ones. They generally bring forth five or six, and sometimes even to nine at a litter. The cubs are brought forth, like those of the bitch, with the eyes closed; the dam suckles them for some weeks, and teaches them betimes to eat flesh, which she prepares for them by chewing it first herself. Some time after she brings them stronger food, hares, partridges, and birds yet alive. The young wolves begin by playing with them, and end by killing them. The dam then strips them of their feathers, tears them in pieces, and gives to each of them a share. They do not leave the den where they have been littered till they are six weeks or two months old. They then follow the old one, who leads them to drink to the trunk of some old tree where the water has settled, or at some pool in the neighbourhood. If she apprehends any danger, she instantly conceals them in the first convenient place, or brings them back

to their former retreat. In this manner they follow her for some months: when they are attacked, she defends them with all her strength, and more than usual ferocity. Although, at other times, more timorous than the male, at that season she becomes bold and fearless; willing perhaps to teach the young ones future courage by her own example. It is not till they are about ten or twelve months old, and until they have shed their first teeth, and completed the new, that she thinks them in a capacity to shift for themselves. Then, when they have acquired arms from nature, and have learned industry and courage from her example, she declines all future care of them, being again engaged in bringing up a new progeny.

The males and females are in a capacity to engender when two years old. It is probable that the females of this species, as well as of most others, are sooner completed than the males; but this is certain, that they never desire to copulate until their second winter; from whence we may suppose that they live fifteen or twenty years; for, allowing three years for their complete growth, this multiplied by seven gives them a life of twenty-one; most animals, as has been observed, living about seven times the number of years which they take to come to perfection. Of this, however, there is as yet no certainty, no more than of what huntsmen assert, that in all the litters there are more males than females. From them also we learn, that there are some of the males who attach themselves to the female, who accompany her during her gestation, until the time of bringing forth, when she hides the place of her retreat from the male, lest he should devour her cubs; but after this, when they are brought forth, that he then takes the same care of them as the female, carries them provisions, and, if the dam should happen to be killed, rears them up in her stead.

The wolf grows gray as he grows old, and his teeth wear, like those of most other animals, by using; he sleeps when his belly is full, or when he is fatigued, rather by day than night; and always, like the dog, is very easily waked. He drinks frequently; and, in times of drought, when there is no water to be found in the trunks of old trees, or in the pools about the forest, he comes often, in the day, down to the brooks, or the lakes in the plain. Although very voracious, he supports hunger for a long time, and often lives four or five days without food, provided he be supplied with water.

The wolf has great strength, particularly in his fore parts, in the muscles of his neck and jaws. He carries off a sheep in his mouth without letting it touch the ground, and runs with it much swifter than the shepherds who pursue him; so that nothing but the dogs can overtake and oblige him to quit his prey. He bites cruelly, and always with greater vehemence in proportion as he is least resisted; for he uses precautions with such animals as attempt to stand upon the defensive. He is ever cowardly, and never fights but when under a necessity of satisfying hunger, or making good his retreat. When he is wounded by a bullet, he is heard to cry out; and yet, when surrounded by the peasants, and attacked with clubs, he never howls as the dog under correction, but defends himself in silence, and dies as hard as he lived.

His nature is, in fact, more savage than that of the dog; he has less sensibility and greater strength. He travels, runs, and keeps plundering for whole days and nights together. He is in a manner indefatigable; and perhaps, of all animals, he is the most difficult to be hunted down. The dog is good-natured and courageous; the wolf, though savage, is ever fearful. If he happens to be caught in a pit-fall, he

is for some time so frightened and astonished, that he may be killed without offering to resist, or taken alive without much danger. At that instant, one may clap a collar round his neck, muzzle him, and drag him along, without his ever giving the least signs of anger or resentment. At all other times he has his senses in great perfection; his eye, his ear, and particularly his sense of smelling, which is even superior to the two former. He smells a carcass at more than a league's distance; he also perceives living animals a great way off, and follows them a long time upon the scent. Whenever he leaves the wood, he always takes care to go out against the wind. When just come to its extremity, he stops to examine, by his smell, on all sides, the emanations that may come either from his enemy or his prey, which he very nicely distinguishes. He prefers those animals which he kills himself to those he finds dead; and yet he does not disdain these when no better is to be had. He is particularly fond of human flesh; and perhaps, if he was sufficiently powerful, he would eat no other. Wolves have been seen following armies, and arriving in numbers upon the field of battle, where they devoured such dead bodies as were left upon the field, or but negligently interred. These, when once accustomed to human flesh, ever after seek particularly to attack mankind, and choose to fall upon the shepherd rather than his flock. We have had a late instance of two or three of these keeping a whole province, for more than a month, in a continual alarm.

It sometimes happens that a whole country is called out to extirpate these most dangerous invaders. The hunting the wolf is a favourite diversion among the great of some countries; and it must be confessed it seems to be the most useful of any. These animals are distinguished by the huntsman into the *young*

wolf, the *old wolf*, and the *great wolf*. They are known by the prints of their feet; the older the wolf, the larger the track he leaves. That of the female is narrower and longer than that of the male. It is necessary to have a very good starter to put up the wolf; and it is even convenient to use every art to encourage him in its pursuit; for all dogs have a natural repugnance against this animal, and are but cold in their endeavours. When the wolf is once put up, it is then proper to have greyhounds to let fly at him, in leashes, one after the other. The first leash is sent after him in the beginning, seconded by a man on horseback; the second is let loose about half a mile farther; and the third when the rest of the dogs come up with, and begin to bait him. He for a long time keeps them off, stands his ground, threatens them on all sides, and often gets away; but usually the hunters arriving come in aid of the dogs, and help to despatch him with their cutlasses. When the animal is killed, the dogs testify no appetite to enjoy their victory, but leave him where he falls, a frightful spectacle, and even in death hideous.

The wolf is sometimes also hunted with harriers; but as he always goes straight forward, and often holds his speed for a whole day together, this kind of chase is tedious and disagreeable, at least if the harriers are not assisted by greyhounds, who may harass him at every view. Several other arts have been also used to take and destroy this noxious animal. He is surrounded and wounded by men and large house-dogs; he is secured in traps; he is poisoned by carcasses prepared and placed for that purpose, and is caught in pit-falls. "Gesner tells us of a friar, a woman, and a wolf, being taken in one of these, all in the same night. The woman lost her senses with the fright, the friar his reputation, and the wolf his life." All these disasters, however, do

not prevent this animal's multiplying in great numbers, particularly in countries where the woods are plenty. France, Spain, and Italy, are greatly infested with them; but England, Ireland, and Scotland, are happily set free.

King Edgar is said to be the first who attempted to rid this kingdom of such disagreeable inmates, by commuting the punishment for certain crimes into the acceptance of a number of wolves' tongues from each criminal.* However, some centuries after, these animals were again increased to such a degree, as to become the object of royal attention; accordingly Edward the First issued out his mandate to one Peter Corbet to superintend and assist in the destruction of them. They are said to have infested Ireland long after they were extirpated in England; however, the oldest men in that country remember nothing of these animals, and it is probable that there have been none there for more than a century past. Scotland also is totally free.

The colour of this animal differs according to the different climates where it is bred, and often changes even in the same country. Beside the common wolves, which are found in France and Germany, there are others with thicker hair, inclining to yellow. These are more savage and less noxious than the former, neither approaching the flocks nor habitations, and living rather by the chase than rapine. In the northern climates there are found some quite black, and some white all over. The former are larger and stronger than those of any other kinds.

The species is very much diffused in every part of the world, being found in Asia, Africa, and in America, as well as Europe. The wolves of Senegal resemble those of France, except that they are

* British Zoology, p. 62.

larger and much fiercer than those of Europe. Those of Egypt are smaller than those of Greece. In the East the wolf is trained up for a show, being taught to dance and play tricks; and one of these thus educated often sells for four or five hundred crowns. "It is said that in Lapland the wolf will never attack a rein-deer that is seen haltered; for this wary animal, being well acquainted with the nature of a trap, suspects one whenever it perceives a rope However, when he sees the deer entirely at liberty, he seldom fails to destroy it.

"The wolf of North America is blacker and much less than those in other parts of the world, and approaches nearer in form to the dog than those of the ordinary kind.* In fact, they were made use of as such by the savages, till the Europeans introduced others; and even now, on the remoter shores, or the more inland parts of the country, the savages still make use of these animals in hunting. They are very tame and gentle; and those of this kind that are wild are neither so large nor so fierce as an European wolf, nor do they ever attack mankind. They go together in large packs by night to hunt the deer, which they do as well as any dogs in England; and it is confidently asserted that one of them is sufficient to run down a deer.† Whenever they are seen along the banks of those rivers near which the wandering natives pitch their huts, it is taken for granted that the bison or the deer are not far off; and the savages affirm that the wolves come with the tidings, in order to have the garbage after the animal has been killed by the hunters. Catesby adds a circumstance relative to these animals, which, if true, invalidates many of M. Buffon's observations in the foregoing history. He asserts, that these being the

* Brooke's Nat. Hist. vol. i, p. 198. † Dictionaire Raisonnee, *Loup*.

only dogs used by the Americans, before the arrival of the Europeans among them, they have since engendered together, and that their breed has become prolific; which proves the dog and the wolf to be of the same species. It were to be wished that this fact were better ascertained; we should then know to a certainty in what degree the dog and wolf resemble each other, as well in nature as in conformation; might we then, perhaps, be enabled to improve the breed of our dogs, by bringing them back to their native forms and instincts; we might, by crossing the strain, restore that race of those bold animals which the ancients assure us were more than a match for the lion."

However this animal may be useful in North America, the wolf of Europe is a very noxious animal, and scarcely any thing belonging to him is good, except his skin. Of this the furriers make a covering that is warm and durable, though coarse and unsightly. His flesh is very indifferent, and seems to be disliked by all other animals; no other creature being known to eat the wolf's flesh, except the wolf himself. He breathes a most fetid vapour from his jaws, as his food is indiscriminate, often putrid, and seldom cleanly. In short, every way offensive, a savage aspect, a frightful howl, an insupportable odour, a perverse disposition, fierce habits, he is hateful while living, and useless when dead.

THE FOX.

THE FOX very exactly resembles the wolf and the dog internally; and, although he differs greatly from both in size and carriage, yet when we come to examine his shapes minutely, there will appear

to be very little difference in the description. Were, for instance, a painter to draw from a natural historian's exactest description the figure of a dog, a wolf, and a fox, without having ever seen either, he would be very apt to confound all these animals together; or rather, he would be unable to catch those peculiar outlines that no description can supply. Words will never give any person an exact idea of forms any way irregular; for although they be extremely just and precise, yet the numberless discriminations to be attended to will confound each other, and we shall no more conceive the precise form, than we should be able to tell when one pebble more was added or taken away from a thousand. To conceive, therefore, how the fox differs in form from the wolf or the dog, it is necessary to see all three, or at least to supply the defects of description, by examining the difference in a print.

The fox is of a slenderer make than the wolf, and not near so large; for as the former is above three feet and a half long, so the other is not above two feet three inches. The tail of the fox also is longer in proportion, and more bushy; its nose is smaller, and approaching more nearly to that of the greyhound; and its hair softer. On the other hand, it differs from the dog in having its eyes obliquely situated, like those of the wolf; its ears are directed also in the same manner as those of the wolf, and its head is equally large in proportion to its size. It differs still more from the dog in its strong offensive smell, which is peculiar to the species, and often the cause of their death. However, some are ignorantly of opinion that it will keep off infectious diseases, and they preserve this animal near their habitations for that very purpose.

The fox has since the beginning been famous for his cunning and his arts, and he partly merits his re-

putation.* Without attempting to oppose either the dogs or the shepherds, without attacking the flock, or alarming the village, he finds an easier way to subsist, and gains by his address what is denied to his strength or courage. Patient and prudent, he waits the opportunity of depredation; and varies his conduct with every occasion. His whole study is his preservation: although nearly as indefatigable, and actually more swift than the wolf, he does not entirely trust to either, but makes himself an asylum, to which he retires in case of necessity; where he shelters himself from danger, and brings up his young.

As among men those who lead a domestic life are more civilized, and more endued with wisdom, than those who wander from place to place, so, in the inferior ranks of animated nature, the taking possession of a home supposes a degree of instinct which others are without.† The choice of the situation for this domicil, the art of making it convenient, of hiding its entrance, and securing it against more powerful animals, are all so many marks of superior skill and industry. The fox is furnished with both, and turns them to his advantage. He generally keeps his kennel at the edge of the wood, and yet within an easy journey of some neighbouring cottage. From thence he listens to the crowing of the cock, and the cackling of the domestic fowls. He scents them at a distance; he seizes his opportunity, conceals his approaches, creeps slyly along, makes the attack, and seldom returns without his booty. If he be able to get into the yard, he begins by levelling all the poultry without remorse, and carrying off a part of the spoil, hides it at some convenient distance, and again returns to the charge. Taking off another fowl in the same manner, he hides that

* Buffon, *Renard.* † Ibid.

also, but not in the same place; and this he practises for several times together, until the approach of day, or the noise of the domestics, give him warning to retire. The same arts are practised when he finds birds entangled in springes laid for them by the fowler: the fox takes care to be beforehand, very expertly takes the bird out of the snare, hides it for three or four days, and knows very exactly when and where to return to avail himself of the hidden treasure. He is equally alert in seizing the young hares and rabbits, before they have strength enough to escape him; and when the old ones are wounded and fatigued, he is sure to come upon them in their moments of distress, and to show them no mercy. In the same manner he finds out birds' nests, seizes the partridge and the quail while sitting, and destroys a large quantity of game. The wolf is most hurtful to the peasant, but the fox to the gentleman. In short, nothing that can be eaten seems to come amiss; rats, mice, serpents, toads, and lizards. He will, when urged by hunger, eat vegetables and insects; and those that live near the sea-coasts will, for want of other food, eat crabs, shrimps, and shell-fish. The hedge-hog in vain rolls itself up into a ball to oppose him. This determined glutton teazes it until it is obliged to appear uncovered, and then he devours it. The wasp and the wild bee are attacked with equal success. Although at first they fly out upon the invader, and actually oblige him to retire, this is but for a few minutes, until he has rolled himself upon the ground, and thus crushed such as stick to his skin; he then returns to the charge, and at last, by perseverance, obliges them to abandon their combs; which he greedily devours, both wax and honey.

The chase of the fox requires less preparation than that of the wolf, and it is also more pleasant

and amusing. As dogs have a natural repugnance to pursue the wolf, so they are equally alert in following the fox; which they prefer even to the chase of the hare or the buck. The huntsmen, as upon other occasions, have their cant terms for every part of this chase. The fox the first year is called a *cub;* the second, a *fox;* and the third, an *old fox;* his tail is called the *brush* or *drag*, and his excrement the *billiting*. He is usually pursued by a large kind of harrier or hound, assisted by terriers, or a smaller breed, that follow him into his kennel, and attack him there. The instant he perceives himself pursued, he makes to his kennel, and takes refuge at the bottom of it, where for a while he loses the cry of his enemies; but the whole pack coming to the mouth, redouble their vehemence and rage, and the little terrier boldly ventures in. It often happens that the kennel is made under a rock, or among the roots of old trees; and in such cases the fox cannot be dug out, nor is the terrier able to contend with him at the bottom of his hole. By this contrivance he continues secure; but when he can be dug out, the usual way is to carry him in a bag to some open country, and there set him loose before the hounds. The hounds and the men follow, barking and shouting wherever he runs; and the body being strongly employed, the mind has not time to make any reflexion on the futility of the pursuit. What adds to this entertainment is the strong scent which the fox leaves, that always keeps up a full cry; although as his scent is stronger than that of the hare, it is much sooner evaporated. His shifts to escape, when all retreat is cut off to his kennel, are various and surprising. He always chooses the most woody country, and takes those paths that are most embarrassed with thorns and briars. He does not double, nor use the unavailing shifts of the hare; but flies in

a direct line before the hounds, though at no very great distance; manages his strength; takes to the low and plashy grounds, where the scent will be less apt to lie; and at last, when overtaken, he defends himself with desperate obstinacy, and fights in silence to the very last gasp.

The fox, though resembling the dog in many respects, is nevertheless very distinct in his nature, refusing to engender with it; and though not testifying the antipathy of the wolf, yet discovering nothing more than indifference. This animal also brings forth fewer at a time than the dog, and that but once a-year. Its litter is generally from four to six, and seldom less than three. The female goes with young about six weeks, and seldom stirs out while pregnant, but makes a bed for her young, and takes every precaution to prepare for their production. When she finds the place of their retreat discovered, and that her young have been disturbed during her absence, she removes them one after the other in her mouth, and endeavours to find them out a place of better security. A remarkable instance of this animal's parental affection happened while I was writing this history, in the county of Essex. A she-fox that had, as it should seem, but one cub, was unkennelled by a gentleman's hounds near Chelmsford, and hotly pursued. In such a case, when her own life was in imminent peril, one would think it was not a time to consult the safety of her young; however, the poor animal, braving every danger, rather than leave her cub behind to be worried by the dogs, took it up in her mouth, and ran with it in this manner for some miles. At last, taking her way through a farmer's yard, she was assaulted by a mastiff, and at last obliged to drop her cub, which was taken up by the farmer. I was not displeased to hear that this faithful creature escaped

the pursuit, and at last got off in safety. The cubs of the fox are born blind, like those of the dog; they are eighteen months or two years in coming to perfection, and live about twelve or fourteen years.

As the fox makes war upon all animals, so all others seem to make war upon him. The dog hunts him with peculiar acrimony; the wolf is still a greater and more necessitous enemy, who pursues him to his very retreat. Some pretend to say, that, to keep the wolf away, the fox lays at the mouth of its kennel a certain herb, to which the wolf has a particular aversion. This, which no doubt is a fable, at least shows that these two animals are as much enemies to each other as to all the rest of animated nature. But the fox is not hunted by quadrupeds alone; for the birds, who know him for their mortal enemy, attend him in his excursions, and give each other warning of their approaching danger. The daw, the magpie, and the blackbird, conduct him along, perching on the hedges as he creeps below, and, with their cries and notes of hostility, apprize all other animals to beware; a caution which they perfectly understand, and put into practice. The hunters themselves are often informed by the birds of the place of his retreat, and set the dogs into those thickets where they see them particularly noisy and querulous. So that it is the fate of this petty plunderer to be detested by every rank of animals; all the weaker classes shun, and all the stronger pursue him.

The fox, of all wild animals, is most subject to the influence of climate; and there are found as many varieties in this kind almost as in any of the domestic animals.* The generality of foxes, as is well known, are red; but there are some, though not

* Buffon, *Renard.*

in England, of a grayish cast; and M. Buffon asserts, that the tip of the tail in all foxes is white, which, however, is not so in those of this country. There are only three varieties of this animal in Great Britain, and these are rather established upon a difference of size than of colour or form. The greyhound fox is the largest, tallest, and boldest; and will attack a grown sheep. The mastiff fox is less, but more strongly built. The cur fox is the least and most common; he lurks about hedges and outhouses, and is the most pernicious of the three to the peasant and the farmer.

In the colder countries round the pole, the foxes are of all colours; black, blue, gray, iron-gray, silver-gray, white, white with red legs, white with black heads white with the tip of the tail black, red with the throat and belly entirely white, and lastly with a stripe of black running along the back, and another crossing it at the shoulders.* The common kind, however, is more universally diffused than any of the former, being found in Europe, in the temperate climates of Asia, and also in America; they are very rare in Africa, and in the countries lying under the torrid zone. Those travellers who talk of having seen them at Calicut, and other parts of Southern India, have mistaken the jackall for the fox. The fur of the white fox is held in no great estimation, because the hair falls off; the blue fox skins are bought up with great avidity, from their scarceness; but the black fox skin is of all others the most esteemed, a single skin often selling for forty or fifty crowns. The hair of these is so disposed, that it is impossible to tell which way the grain lies; for if we hold the skin by the head, the hair hangs to the tail; and if we hold it by the tail, it hangs down equally

* Buffon, *Renard.*

smooth and even to the head. These are often made into men's muffs, and are at once very beautiful and warm. In our temperate climate, however, furs are of very little service, there being scarcely any weather so severe in England from which our ordinary clothes may not very well defend us.

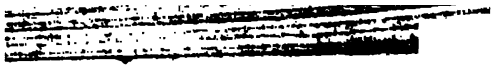
THE JACKALL.

The Jackall is one of the commonest wild animals in the East; and yet there is scarcely any less known in Europe, or more confusedly described by natural historians. In general, we are assured that it resembles the fox in figure and disposition, but we are still ignorant of those nice distinctions by which it is known to be of a different species. It is said to be of the size of a middling dog, resembling the fox in the hinder parts, particularly the tail; and the wolf in the fore-parts, especially the nose. Its legs are shorter than those of the fox, and its colour is of a bright yellow, or sorrel, as we express it in horses. This is the reason it has been called in Latin the *Golden Wolf*, a name, however, which is entirely unknown in the countries where they are most common.

The species of the jackall is diffused all over Asia, and is found also in most parts of Africa, seeming to take up the place of the wolf, which in those countries is not so common. There seem to be many varieties among them: those of the warmest climates appear to be the largest, and their colour is rather of a reddish-brown than of that beautiful yellow by which the smaller jackalls are chiefly distinguished.

Although the species of the wolf approaches very

1. *Ichneumon* — 2. *Jackal* — 3. *Isatis* — 4. *Glutton?*



near to that of the dog, yet the jackall seems to be placed between them; to the savage fierceness of the wolf it adds the impudent familiarity of the dog.* Its cry is a howl, mixed with barking, and a lamentation resembling that of human distress. It is more noisy in its pursuits even than the dog, and more voracious than the wolf. The jackall never goes alone, but always in a pack of forty or fifty together. These unite regularly every day, to form a combination against the rest of the forest. Nothing then can escape them; they are content to take up with the smallest animals; and yet, when thus united, they have courage to face the largest. They seem very little afraid of mankind; but pursue their game to the very doors, without testifying either attachment or apprehension. They enter insolently into the sheep-folds, the yards, and the stables, and when they can find nothing else, devour the leather harness, boots, and shoes, and run off with what they have not time to swallow.

They not only attack the living but the dead. They scratch up with their feet the new-made graves, and devour the corpse, how putrid soever. In those countries therefore where they abound, they are obliged to beat the earth over the grave, and mix it with thorns, to prevent the jackalls from scraping it away. They always assist each other as well in this employment of exhumation, as in that of the chase. While they are at this dreary work, they exhort each other by a most mournful cry, resembling that of children under chastisement; and when they have thus dug up the body, they share it amicably among them. These, like all other savage animals, when they have once tasted of human flesh, can never after refrain from pursuing mankind. They watch the burying-grounds, follow armies, and

* Buffon, vol. xxvii, p. 52.

keep in the rear of caravans. They may be considered as the vulture of the quadruped kind; every thing that once had animal life, seems equally agreeable to them; the most putrid substances are greedily devoured; dried leather, and any thing that has been rubbed with grease, how insipid soever in itself, is sufficient to make the whole go down.

They hide themselves in holes by day, and seldom appear abroad till night-fall, when the jackall that has first hit upon the scent of some large beast, gives notice to the rest by a howl, which it repeats as it runs; while all the rest, that are within hearing, pack in to its assistance. The gazelle, or whatever other beast it may be, finding itself pursued, makes off towards the houses and the towns; hoping, by that means, to deter its pursuers from following: but hunger gives the jackall the same degree of boldness that fear gives the gazelle, and it pursues even to the verge of the city, and often along the streets. The gazelle, however, by this means most frequently escapes; for the inhabitants sallying out, often disturb the jackall in the chase; and as it hunts by the scent, when once driven off, it never recovers it again. In this manner, we see how experience prompts the gazelle, which is naturally a very timid animal, and particularly fearful of man, to take refuge near him; considering him as the least dangerous enemy, and often escaping by his assistance.

But man is not the only intruder upon the jackall's industry and pursuits. The lion, the tiger, and the panther, whose appetites are superior to their swiftness, attend to its call, and follow in silence at some distance behind.* The jackall pursues the whole night with unceasing assiduity, keeping up the cry, and with great perseverance at last tires down its prey; but just at the moment it supposes itself going

* Linnæi Systema, p. 60.

to share the fruits of its labour, the lion or the leopard comes in, satiates himself upon the spoil, and his poor provider, must be content with the bare carcass he leaves behind. It is not to be wondered at, therefore, if the jackall be voracious, since it so seldom has a sufficiency; nor that it feeds on putrid substances, since it is not permitted to feast on what it has newly killed. Besides these enemies, the jackall has another to cope with; for between him and the dog there is an irreconcileable antipathy, and they never part without an engagement. The Indian peasants often chase them as we do foxes; and have learned, by experience, when they have got a lion or a tiger in their rear. Upon such occasions they keep their dogs close, as they would be no match for such formidable animals, and endeavour to put them to flight with their cries. When the lion is dismissed, they more easily cope with the jackall, who is as stupid as it is impudent, and seems much better fitted for pursuing than retreating. It sometimes happens that one of them steals silently into an outhouse, to seize the poultry, or devour the furniture, but hearing others in full cry at a distance, without thought, it instantly answers the call, and thus betrays its own depredations. The peasants sally out upon it, and the foolish animal finds, too late, that its instinct was too powerful for its safety.

THE ISATIS.

As the jackall is a sort of intermediate species between the dog and the wolf,* so the Isatis may be considered as placed between the dog and the fox. This animal has hitherto been supposed to be only

* In this description I have followed M. Buffon.

a variety of the latter; but from the latest observations, there is no doubt of their being perfectly distinct. The isatis is very common in all the northern countries bordering upon the Icy sea; and is seldom found, except in the coldest countries. It extremely resembles the fox in the form of its body and the length of its tail; and a dog, in the make of its head and the position of its eyes. The hair of these animals is softer than that of a common fox; some are blue, some are white at one season, and at another of a russet brown. Although the whole of its hair be two inches long, thick, tufted, and glossy, yet the under jaw is entirely without any, and the skin appears bare in that part.

This animal can bear only the coldest climates, and is chiefly seen along the coasts of the Icy Sea, and upon the banks of the great rivers that discharge themselves therein. It is chiefly fond of living in the open country, and seldom seen in the forest, being mostly found in the mountainous and naked regions of Norway, Siberia, and Lapland. It burrows like the fox; and when with young, the female retires to her kennel, in the same manner as the fox is seen to do. These holes, which are very narrow, and extremely deep, have many outlets. They are kept very clean, and are bedded at the bottom with moss, for the animal to be more at its ease. Its manner of coupling, time of gestation, and number of young, are all similar to what is found in the fox; and it usually brings forth at the end of May, or the beginning of June.

Such are the particulars in which this animal differs from those of the dog kind, and in which it resembles them; but its most striking peculiarity remains still to be mentioned, namely, its changing its colour, and being seen at one time brown, and at another perfectly white. As was already said, some

are naturally blue, and their colour never changes; but such as are to be white, are, when brought forth, of a yellow hue, which, in the beginning of September, is changed to white, all except along the top of the back, along which runs a stripe of brown, and another crossing it down the shoulders, at which time the animal is called the *crossed fox:* however, this brown cross totally disappears before winter, and then the creature is all over white, and its fur is two inches long; this, about the beginning of May, again begins to fall, and the moulting is completed about the middle of July, when the isatis becomes brown once more. The fur of this animal is of no value, unless it be killed in winter.

THE HYÆNA.

The Hyæna is the last animal I shall mention among those of the dog kind, which it in many respects resembles, although too strongly marked to be strictly reduced to any type. The hyæna is nearly of the size of a wolf; and has some similitude to that animal in the shape of its head and body. The head, at first sight, does not appear to differ, except that the ears of the hyæna are longer, and more without hair; but, upon observing more closely, we shall find the head broader, the nose flatter, and not so pointed. The eyes are not placed obliquely, but more like those of a dog. The legs, particularly the hinder, are longer than those either of the dog or the wolf, and different from all other quadrupeds, in having but four toes, as well on the fore-feet as on the hinder. Its hair is of a dirty grayish, marked with black, disposed in waves down its body. Its tail is short, with pretty long hair; and immediately

under it, above the anus, there is an opening into a kind of glandular pouch, which separates a substance of the consistence, but not of the odour, of civet. This opening might have given rise to the error of the ancients, who asserted, that this animal was every year, alternately, male and female. Such are the most striking distinctions of the hyæna, as given us by naturalists; which, nevertheless, convey but a very confused idea of the peculiarity of its form. Its manner of holding the head seems remarkable; somewhat like a dog pursuing the scent, with the nose near the ground. The head being held thus low, the back appears elevated, like that of the hog, which, with a long bristly band of hair that runs all along, gives it a good deal the air of that animal; and it is probable that from this similitude it first took its name, the word *huoina* being Greek, and derived from *hus*, which signifies *a sow*.

But no words can give an adequate idea of this animal's figure, deformity, and fierceness: more savage and untameable than any other quadruped, it seems to be for ever in a state of rage or rapacity, for ever growling, except when receiving its food. Its eyes then glisten, the bristles of its back all stand upright, its head hangs low, and yet its teeth appear; all which gives it a most frightful aspect; which a dreadful howl tends to heighten. This, which I have often heard, is very peculiar: its beginning resembles the voice of a man moaning, and its latter part as if he were making a violent effort to vomit. As it is loud and frequent, it might, perhaps, have been sometimes mistaken for that of a human voice in distress, and have given rise to the accounts of the ancients, who tell us, that the hyæna makes its moan to attract unwary travellers, and then to destroy them: however this be, it seems the most untractable, and, for its size, the most terrible of all

other quadrupeds; nor does its courage fall short of its ferocity; it defends itself against the lion, is a match for the panther, attacks the ounce, and seldom fails to conquer.

It is an obscene and solitary animal, to be found chiefly in the most desolate and uncultivated parts of the torrid zone, of which it is a native.* It resides in the caverns of mountains, in the clefts of rocks, or in dens that it has formed for itself under the earth. Though taken never so young, it cannot be tamed; it lives by depredation, like the wolf, but is much stronger, and more courageous. It sometimes attacks man, carries off cattle, follows the flock, breaks open the sheep-cots by night, and ravages with insatiable voracity. Its eyes shine by night; and it is asserted, not without great appearance of truth, that it sees better by night than by day. When destitute of other provision, it scrapes up the graves and devours the dead bodies, how putrid soever. To these dispositions, which are sufficiently noxious and formidable, the ancients have added numberless others, which are long since known to be fables; as, for instance, that the hyæna was male and female alternately; that having brought forth and suckled its young, it then changed sexes for a year, and became a male. This, as was mentioned above, could only proceed from the opening under the tail, which all animals of this species are found to have; and which is found in the same manner in no other quadruped, except the badger. There is in the weazel kind, indeed, an opening, but it is lower down, and not placed above the anus, as in the badger and the hyæna. Some have said that this animal changes the colour of its hair at will; others, that a stone was found in its eye, which put under a man's tongue, gave him the gift of prophecy; some have

* Buffon.

said, that it has no joints in the neck, which, however, all quadrupeds are known to have; and some, that the shadow of the hyæna keeps dogs from barking. These, among many other absurdities, have been asserted of this quadruped; and which I mention to show the natural disposition of mankind, to load those that are already but too guilty, with accumulated reproach.

[Mr. Pennant describes a variety of this species, which he calls the *spotted hyæna*. It has a large and flat head; some long hairs above each eye; very long whiskers on each side of the nose; a short black mane; hair on the body short and smooth; ears short, and a little pointed, their outside black, inside cinereous; face and upper part of the head black; body and limbs reddish-brown, marked with distinct black round spots; the hind legs with black transverse bars; the tail short, black, and full of hair. It inhabits Guinea, Ethiopia, and the Cape; lives in holes in the earth, or clefts of the rocks; preys by night; howls horribly; breaks into the folds, and kills two or three sheep; devours as much as it can, and carries away one for a future repast; will attack mankind, scrape open graves, and devour the dead. Bosman has given this creature the name of jackall; by which Buffon being misled, makes it synonymous with the common jackall. This hyæna is called the *tiger-wolf* by the colonists at the Cape, where it is a very common and formidable beast of prey.

Of this animal, the following story is related by Dr. Sparmann, in his Voyage to the Cape, for the truth of which, however, he does not entirely vouch.

"At a feast near the Cape, one night, a trumpeter, who had got his fill, was carried out of doors, in order that he might cool himself, and get sober again. The scent of him soon drew thither a tiger-

wolf, which threw him on his back, and dragged him along with him as a corpse, and consequently a fair prize, up towards Table-mountain. During this, however, our drunken musician awaked, enough in his senses to know the danger of his situation, and to sound the alarm with his trumpet, which he carried fastened to his side. The wild beast, as may easily be supposed, was not less frightened in his turn; and thus afforded the trumpeter an opportunity of making his escape."]

CHAPTER XVII.

ON ANIMALS OF THE WEASEL KIND.

HAVING described the bolder ranks of carnivorous animals, we now come to a minuter and more feeble class, less formidable indeed than any of the former, but far more numerous, and, in proportion to their size, more active and enterprising. The weasel kind may be particularly distinguished from other carnivorous animals, by the length and slenderness of their bodies, which are so fitted as to wind, like worms, into very small openings, after their prey; and hence, also, they have received the name of vermin, from their similitude to the worm in this particular. These animals differ from all of the cat kind, in the formation and disposition of the claws, which, as in the dog kind, they can neither draw in nor extend at pleasure, as cats are known to do. They differ from the dog kind, in being clothed rather with fur than hair; and although some varieties of the fox may resemble them in this particular, yet the coat of the latter is longer, stronger, and always more resembling hair. Beside these

distinctions, all animals of the weasel kind have glands placed near the anus, that either open into, or beneath it, furnishing a substance, that, in some, has the most offensive smell in nature, in others, the most pleasing perfume. All of this kind are still more marked by their habitudes and dispositions than their external form; cruel, voracious, and cowardly, they subsist only by theft, and find their chief protection in their minuteness. They are all, from the shortness of their legs, slow in pursuit; and therefore owe their support to their patience, assiduity, and cunning. As their prey is precarious, they live a long time without food; and if they happen to fall in where it is in plenty, they instantly destroy all about them before they begin to satisfy their appetite; and suck the blood of every animal before they begin to touch its flesh.

These are the marks common to this kind, all the species of which have a most striking resemblance to each other; and he that has seen one, in some measure may be said to have seen all. The chief distinction in this numerous class of animals, is to be taken from the size, for no words can give the minute irregularities of that outline by which one species is to be distinguished from that which is next it. I will begin therefore, with the least and the best known of this kind, and, still marking the size, will proceed gradually to larger and larger, until we come from the weasel to the glutton, which I take to be the largest of all. The weasel will serve as a model for all the rest; and, indeed, the points in which they differ from this little animal are but very inconsiderable.*

[* This class of quadrupeds have six cutting teeth in each jaw; those of the upper jaw, erect, sharp pointed and distinct; of the lower jaw, blunter, huddled together, and two placed within the line of the rest: the tongue is smooth.]

The Weasel,* as was said, is the smallest of this numerous tribe; its length not exceeding seven inches, from the tip of the nose to the insertion of the tail. This length, however, seems to be very great, if we compare it with the height of the animal, which is not above an inch and a half. In measuring the wolf, we find him to be not above once and a half as long as he is high; in observing the weasel, we find it near five times as long as it is high, which shows an amazing disproportion. The tail also, which is bushy, is two inches and a half long, and adds to the apparent length of this little animal's body. The colour of the weasel is of a reddish-brown on the back and sides, but white under the throat and the belly. It has whiskers like a cat, and thirty-two teeth, which is two more than any of the cat kind; and these also seem better adapted for tearing and chewing than those of the cat kind are. The eyes are little and black; the ears short, broad, and roundish, and have a fold at the lower part, which makes them look as if they were double. Beneath the corners of the mouth, on each jaw, is a spot of brown.

This animal, though very diminutive to appearance, is nevertheless a very formidable enemy to quadrupeds a hundred times its own size. It is very common and well known in most parts of this country; but seems held in very different estimation in different parts of it. In those places where sheep or lambs are bred, the weasel is a most noxious inmate, and every art is used to destroy it; on the contrary, in places where agriculture is chiefly followed, the weasel is considered as a friend that thins the number of such vermin as chiefly live upon corn: however, in all places, it is one of the most untameable and untractable animals in the

* British Zoology, vol. i. p. 83.

world.* When kept in a cage, either for the purposes of amusement or inspection, it will not touch any part of its victuals while any body looks on. It keeps in a continual agitation, and seems frightened so much at the sight of mankind, that it will die if not permitted to hide itself from their presence. For this purpose, it must be provided, in its cage, with a sufficient quantity of wool or hay, in which it may conceal itself, and where it may carry whatever it has got to eat; which, however, it will not touch until it begins to putrefy. In this state it is seen to pass three parts of the day in sleeping; and reserves the night for its time of exercise and eating.

In its wild state, the night is likewise the time during which it may be properly said to live. At the approach of evening, it is seen stealing from its hole, and creeping about the farmer's yard for its prey. If it enters the place where poultry are kept, it never attacks the cocks or the old hens, but immediately aims at the young ones. It does not eat its prey on the place, but, after killing it by a single bite near the head, and with a wound so small that the place can scarcely be perceived, it carries it off to its young, or its retreat. It also breaks and sucks the eggs, and sometimes kills the hen that attempts to defend them. It is remarkably active; and in a confined place, scarcely any animal can escape it. It will run up the sides of walls with such facility, that no place is secure from it; and its body is so small, that there is scarcely any hole but what it can wind through. During the summer its excursions are more extensive; but in winter it chiefly confines itself in barns and farm-yards, where it remains till spring, and where it brings forth its young. All this season it makes war upon the rats

* Buffon, vol. xv, p. 37.

and mice, with still greater success than the cat; for being more active and slender, it pursues them into their holes, and after a short resistance, destroys them. It creeps also into pigeon-holes, destroys the young, catches sparrows, and all kinds of small birds; and, if it has brought forth its young, hunts with still greater boldness and avidity. In summer, it ventures farther from the house; and particularly goes into those places where the rat, its chiefest prey, goes before it. Accordingly it is found in the lower grounds, by the side of waters, near mills, and often is seen to hide its young in the hollow of a tree.

The female takes every precaution to make an easy bed for her little ones: she lines the bottom of her hole with grass, hay, leaves, and moss, and generally brings forth from three to five at a time. All animals of this, as well as those of the dog kind, bring forth their young with closed eyes; but they very soon acquire strength sufficient to follow the dam in her excursions, and assist in her projects of petty rapine. The weasel, like all others of its kind, does not run on equably, but moves by bounding; and when it climbs a tree, by a single spring it gets a good way from the ground. It jumps in the same manner upon its prey; and, having an extremely limber body, evades the attempts of much stronger animals to seize it.

This animal, like all of its kind, has a very strong smell; and that of the weasel is peculiarly fetid. This scent is very distinguishable in those creatures when they void their excrement; for the glands which furnish this fetid substance, which is of the consistence of suet, open directly into the orifice of the anus, and taint the excrement with the strong effluvia. The weasel smells more strongly in summer than in winter; and more abominably when irritated or pursued, than when at its ease. It always preys in silence,

ing of a lightish brown, and though both this animal as well as the weasel, in the most northern parts of Europe, changes its colour in winter, and becomes white, yet even then the weasel may be easily distinguished from the ermine by the tip of the tail, which in the latter is always black.

It is well known that the fur of the ermine is the most valuable of any hitherto known; and it is in winter only that this little animal has it of the proper colour and consistence. In summer, the ermine, as was said before, is brown, and it may at that time more properly be called the stoat. There are few so unacquainted with quadrupeds as not to perceive this change of colour in the hair, which in some degree obtains in them all. The horse, the cow, and the goat, all manifestly change colour in the beginning of summer, the old long hair falling off, and a shorter coat of hair appearing in its room, generally of a darker colour, and yet more glossy. What obtains in our temperate climate, is seen to prevail still more strongly in those regions where the winters are long and severe, and the summers short and yet generally hot in an extreme degree. The animal has strength enough, during that season, to throw off a warm coat of fur, which would but incommode it, and continues for two or three months in a state somewhat resembling the ordinary quadrupeds of the milder climates. At the approach of winter, however, the cold increasing, the coat of hair seems to thicken in proportion; from being coarse and short it lengthens and grows finer, while multitudes of smaller hairs grow up between the longer, thicken the coat and give it all that warmth and softness which are so much valued in the furs of the northern animals.

It is no easy matter to account for this remarkable warmth of the furs of northern quadrupeds, or how

they come to be furnished with such an abundant covering. It is easy enough, indeed, to say that nature fits them thus for the climate; and, like an indulgent mother, when she exposes them to the rigour of an intemperate winter, supplies them with a covering against its inclemency. But this is only flourishing: it is not easy, I say, to tell how nature comes to furnish them in this manner. A few particulars on this subject are all that we yet know. It is observable among quadrupeds, as well as even among the human species itself, that a thin sparing diet is apt to produce hair: children that have been ill fed, famished dogs and horses, are more hairy than others whose food has been more plentiful. This may, therefore, be one cause that the animals of the north, in winter, are more hairy than those of the milder climates. At that season, the whole country is covered with deep snow, and the provisions which these creatures are able to procure can be but precarious and scanty. Its becoming finer may also proceed from the severity of the cold, that contracts the pores of the skin, and the hair consequently takes the shape of the aperture through which it grows, as wires are made smaller by being drawn through a smaller orifice. However this may be, all the animals of the arctic climates may be said to have their winter and summer garments, except very far to the north, as in Greenland, where the cold is so continually intense, and the food so scarce, that neither the bears nor foxes change colour.*

The ermine, as was said, is remarkable among these for the softness, the closeness, and the warmth of its fur. It is brown in summer, like the weasel, and changes colour before the winter is begun, becoming a beautiful cream colour, all except the tip of the tail, as was said before, which still continues

* Crantz's History of Greenland, vol. i, p. 72.

black. M. Daubenton had one of these brought him with its white winter fur, which he put into a cage and kept, in order to observe the manner of moulting its hair. He received it in the beginning of March; in a very short time it began to shed its coat, and a mixture of brown was seen to prevail among the white, so that at the 9th of the same month its head was nearly become of a reddish-brown. Day after day this colour appeared to extend, at first along the neck and down the back, in the manner of a stripe of about half an inch broad. The fore part of the legs then assumed the same colour; a part of the head, the thighs, and the tail, were the last that changed; but at the end of the month there was no white remaining, except on those parts which are always white in this species, particularly the throat and the belly. However, he had not the pleasure of seeing this animal resume its former whiteness, although he kept it for above two years; which without doubt, was owing to its imprisoned state; this colour being partly owing to its stinted food, and partly to the rigour of the season. During its state of confinement, this little animal always continued very wild and untractable; forever in a state of violent agitation, except when asleep, which it often continued for three parts of the day. Except for its most disagreeable scent, it was an extremely pretty creature, its eyes sprightly, its physiognomy pleasant, and its motions so swift that the eye could scarcely attend them. It was fed with eggs and flesh, but it always let them putrefy before it touched either. As some of this kind are known to be fond of honey, it was tried to feed this animal with such food for a while: after having for three or four days deprived it of other food, it ate of this, and died shortly after; a strong proof of its being a distinct species from the polecat or the martin, who

feed upon honey, but otherwise pretty much resemble the ermine in their figure and dispositions.

In the north of Europe and Siberia, their skins make a valuable article of commerce, and they are found there much more frequently than among us. In Siberia they burrow in the fields, and are taken in traps baited with flesh. In Norway they are either shot with blunt arrows, or taken in traps made of two flat stones; one being propped with a stick, to which is fastened a baited string, and when the animals attempt to pull this away, the stone drops and crushes them to death. This animal is sometimes found white in Great Britain, and is then called a white weasel. Its furs, however, among us are of no value, having neither the thickness, the closeness, nor the whiteness of those which come from Siberia. The fur of the ermine, in every country, changes by time; for, as much of its beautiful whiteness is given it by certain arts known to the furriers, so its natural colour returns, and its former whiteness can never be restored again.

THE FERRET.

THE animal next in size to the ermine is the Ferret; which is a kind of domestic in Europe, though said to be originally brought from Africa into Spain, which being a country abounding in rabbits, required an animal of this kind, more than any other: however this be, it is not to be found at present among us, except in its domestic state; and it is chiefly kept tame, for the purposes of the warren.

The ferret is about one foot long, being nearly four inches longer than the weasel. It resembles that animal in the slenderness of its body, and the

shortness of its legs; but its nose is sharper, and its body more slender, in proportion to its length. The ferret is commonly of a cream colour; but they are also found of all the colours of the weasel kind; white, blackish, brown, and party-coloured. Those that are of the whitish kind, have their eyes red, as is almost general with all animals entirely of that colour. But its principal distinction from the weasel is the length of the hair on its tail, which is much longer in the ferret than the weasel. Words will not well express the other distinctions; and what might take up a page in dull discrimination, a single glance of the eye, when the animals themselves are presented can discover.

As this animal is a native of the torrid zone,* so it cannot bear the rigours of our climate without care and shelter, and it generally repays the trouble of its keeping by its great agility in the warren. It is naturally such an enemy of the rabbit kind, that if a dead rabbit be presented to a young ferret, although it has never seen one before, it instantly attacks and bites it with an appearance of rapacity. If the rabbit be living, the ferret is still more eager, seizes it by the neck, winds itself round it, and continues to suck its blood till it be satiated.

Their chief use in warrens, is to enter the holes, and drive the rabbits into the nets that are prepared for them at the mouth. For this purpose, the ferret is muzzled; otherwise, instead of driving out the rabbit, it would content itself with killing and sucking its blood at the bottom of the hole; but by this contrivance, being rendered unable to seize its prey, the rabbit escapes from its claws, and instantly makes to the mouth of the hole with such precipitation, that it is inextricably entangled in the net placed there for its reception. It often happens,

* Buffon.

however, that the ferret disengages itself of its muzzle, and then it is most commonly lost, unless it be dug out; for finding all its wants satisfied in the warren, it never thinks of returning to the owner, but continues to lead a rapacious solitary life while the summer continues, and dies with the cold of the winter. In order to bring the ferret from his hole, the owners often burn straw and other substances at the mouth; they also beat above, to terrify it: but this does not always succeed; for as there are often several issues to each hole, the ferret is affected neither by the noise nor the smoke, but continues secure at the bottom, sleeping the greatest part of the time, and waking only to satisfy the calls of hunger.

The female of this species* is sensibly less than the male, whom she seeks with great ardour, and, it is said, often dies, without being admitted. They are usually kept in boxes, with wool, of which they make themselves a warm bed, that serves to defend them from the rigour of the climate. They sleep almost continually, and the instant they awake, they seem eager for food. They are usually fed with bread and milk. They breed twice a-year. Some of them devour their young as soon as brought forth, and then become fit for the male again. Their number is usually from five to six at a litter; and this is said to consist of more females than males. Upon the whole, this is an useful, but a disagreeable and offensive animal; its scent is fetid, its nature voracious, it is tame without any attachment, and such is its appetite for blood, that it has been known to attack and kill children in the cradle. It is very easy to be irritated; and, although at all times its smell is very offensive, it then is much more so; and its bite is very difficult of cure.

To the ferret kind we may add an animal which

* Buffon.

M. Buffon calls the *Vansire*, the skin of which was sent him stuffed from Madagascar. It was thirteen inches long, a good deal resembling the ferret in figure, but differing in the number of its grinding teeth, which amounted to twelve, whereas in the ferret there are but eight: it differed also in colour, being of a dark brown, and exactly the same on all parts of its body. Of this animal, so nearly resembling the ferret, we have no other history but the mere description of its figure; and in a quadruped whose kind is so strongly marked, perhaps this is sufficient to satisfy curiosity.

THE POLECAT.

THE Polecat is larger than the weasel, the ermine, or the ferret, being one foot five inches long; whereas the weasel is but six inches, the ermine nine, and the ferret eleven inches. It so much resembles the ferret in form, that some have been of opinion they were one and the same animal; nevertheless, there are a sufficient number of distinctions between them. It is, in the first place, larger than the ferret; it is not quite so slender, and has a blunter nose; it differs also internally, having but fourteen ribs, whereas the ferret has fifteen; and wants one of the breast bones, which is found in the ferret: however, warreners assert, that the polecat will mix with the ferret; and they are sometimes obliged to procure an intercourse between these two animals, to improve the breed of the latter, which, by long confinement, is sometimes seen to abate of its rapacious disposition. M. Buffon denies that the ferret will admit the polecat; yet gives a variety, under the name of both animals, which may very probably be a spurious race between the two.

However this be, the polecat seems by much the more pleasing animal of the two; for although the long slender shape of all these vermin tribes gives them a very disagreeable appearance, yet the softness and colour of the hair in some of them atones for the defect, and renders them, if not pretty, at least not frightful. The polecat, for the most part, is of a deep chocolate colour; it is white about the mouth; the ears are short, rounded, and tipt with white; a little beyond the corners of the mouth a stripe begins, which runs backward, partly white and partly yellow: its hair, like that of all this class, is of two sorts, the long and the furry; but in this animal the two kinds are of different colours; the longest is black, and the shorter yellowish:* the throat, feet, and tail, are blacker than any other parts of the body; the claws are white underneath, and brown above; and the tail is above two inches long.

It is very destructive to young game of all kinds:† but the rabbit seems to be its favourite prey; a single polecat is often sufficient to destroy a whole warren; for, with that insatiable thirst for blood which is natural to all the weasel kind, it kills much more than it can devour; and I have seen twenty rabbits at a time taken out dead, which they had destroyed, and that by a wound which was hardly perceptible. Their size, however, which is so much larger than the weasel, renders their retreats near houses much more precarious; although I have seen them burrow near a village, so as scarcely to be extirpated. But in general they reside in woods or thick brakes, making holes under ground of about two yards deep, commonly ending among the roots of large trees, for greater security. In winter they frequent houses, and make a common practice of robbing the hen roosts and the dairy.

* Ray's Synopsis. † British Zoology, vol. i, p. 78.

The polecat is particularly destructive among pigeons,* when it gets into a dove-house; without making so much noise as the weasel, it does a great deal more mischief; it despatches each with a single wound in the head, and, after killing a great number and satiating itself with their blood, it then begins to think of carrying them home. This it carefully performs, going and returning, and bringing them one by one to its hole; but if it should happen that the opening by which it got into the dove-house, be not large enough for the body of the pigeon to get through, this mischievous creature contents itself with carrying away the heads, and makes a most delicious feast upon the brains.

It is not less fond of honey, attacking the hives in winter, and forcing the bees away. It does not remove far from houses in winter, as its prey is not so easily found in the woods, during that season. The female brings forth her young in summer, to the number of five or six at a time; these she soon trains to her own rapacious habits, supplying the want of milk, which no carniverous quadruped has in plenty, with the blood of such animals as she happens to seize. The fur of this animal is considered as soft and warm; yet it is in less estimation than some of a much inferior kind, from its offensive smell, which can never be wholly removed or suppressed. The polecat seems to be an inhabitant of the temperate climates,† scarcely any being found towards the north, and but very few in the warmer latitudes. The species appear to be confined in Europe, from Poland to Italy. It is certain that these animals are afraid of the cold, as they are often seen to come into houses in winter, and as their tracks are never found in the snow near their retreats. It is probable,

* Buffon. † Ibid.

also, that they are afraid of heat, as they are but thinly scattered in the southern climates.

THE MARTIN.

The Martin is a larger animal than any of the former, being generally eighteen inches long, and the tail ten more. It differs from the polecat in being about four or five inches longer; its tail also is longer in proportion, and more bushy at the end; its nose is flatter; its cry is sharper and more piercing; its colours are more elegant; and what still adds to their beauty, its scent, very unlike the former, instead of being offensive, is considered as a most pleasing perfume. The martin, in short, is the most beautiful of all British beasts of prey: its head is small and elegantly formed; its eyes lively; its ears are broad, rounded and open; its back, its sides, and tail, are covered with a fine thick downy fur, with long hair intermixed; the roots are ash-colour, the middle of a bright chesnut, the points black; the head is brown, with a slight cast of red; the legs, and upper sides of the feet, are of a chocolate colour; the palms, or under-sides, are covered with a thick down, like that of the body; the feet are broad; the claws white, large and sharp, well adapted for the purposes of climbing, but, as in others of the weasel kind, incapable of being sheathed or unsheathed at pleasure; the throat and breast are white; the belly of the same colour with the back, but rather paler; the hair on the tail is very long, especially at the end, where it appears much thicker than near the insertion.

There is also a variety of this animal, called the *Yellow-breasted Martin*, which in no respect differs from the former, except that this has a yellow breast,

whereas the other has a white one: the colour of the body also is darker; and, as it lives more among trees than the other martin, its fur is more valuable, beautiful and glossy. The former of these M. Buffon calls the *Fouine;* the latter, simply the *Martin;* and he supposes them to be a distinct species: but as they differ only in colour, it is unnecessary to embarrass history by a new distinction, where there is only so minute a difference.

Of all animals of the weasel kind, the martin is the most pleasing; all its motions show great grace, as well as agility; and there is scarcely an animal in our woods that will venture to oppose it. Quadrupeds five times as big are easily vanquished; the hare, the sheep, and even the wild cat itself, though much stronger, is not a match for the martin: and although carniverous animals are not fond of engaging each other, yet the wild cat and the martin seldom meet without a combat. Gesner tells us of one of this kind that he kept tame, which was extremely playful and pretty; it went among the houses of the neighbourhood, and always returned home when hungry: it was extremely fond of a dog that had been bred up with it, and used to play with it as cats are seen to play, lying on its back, and biting without anger or injury. That which was kept tame by M. Buffon was not quite so social, it was devested of its ferocity, but continued without attachment; and was still so wild as to be obliged to be held by a chain. Whenever a cat appeared, it prepared for war; and if any of the poultry came within its reach, it flew upon them with avidity. Though it was tied by the middle of the body, it frequently escaped; at first, it returned after some hours, but without seeming pleased, as if it only came to be fed; the next time it continued abroad longer; and at last went away without ever returning. It was a fe-

male, and was, when it went off, a year and a half old; and M. Buffon supposes it to have gone in quest of the male. It ate every thing that was given it, except sallad or herbs; and it was remarkably fond of honey: It was remarked that it drank often, and often slept for two days together; and that, in like manner, it was often two or three days without sleeping. Before it went to sleep, it drew itself up into a round form, hid its head, and covered it with its tail. When awake it was in continual agitation, and was obliged to be tied up, not less to prevent its attacking the poultry, than to hinder it from breaking whatever it came near, by the capricious wildness of its motions.

The yellow-breasted martin is much more common in France than in England; and yet even there this variety is much scarcer than that with the white breast. The latter keeps nearer houses and villages, to make its petty ravages among the sheep and the poultry; the other keeps in the woods, and leads in every respect a savage life, building its nests on the tops of trees, and living upon such animals as are entirely wild like itself. About night-fall it usually quits its solitude to seek its prey, hunts after squirrels, rats, and rabbits; destroys great numbers of birds and their young, takes the eggs from the nest, and often removes them to its own without breaking.* The instant the martin finds itself pursued by dogs, for which purpose there is a peculiar breed that seems fit for this chase only, it immediately makes to its retreat, which is generally in the hollow of some tree, towards the top, and which it is impossible to come at without cutting it down. Their nest is generally the original tenement of the squirrel, which that little animal bestowed great pains in completing; but the martin having killed and dis-

* Brooke's Natural History.

possessed the little architect, takes possession of it for its own use, enlarges its dimensions, improves the softness of the bed, and in that retreat brings forth its young. Its litter is never above three or four at a time: they are brought forth with the eyes closed, as in all the rest of this kind, and very soon come to a state of perfection. The dam compensates for her own deficiency of milk, by bringing them eggs and live birds, accustoming them from the beginning to a life of carnage and rapine. When she leads them from the nest into the woods, the birds at once distinguish their enemies, and attend them, as we before observed of the fox, with all the marks of alarm and animosity. Wherever the martin conducts her young, a flock of small birds are seen threatening and insulting her, alarming every thicket, and often directing the hunter in his pursuit.

The martin is more common in North America than in any part of Europe. These animals are found in all the northern parts of the world, from Siberia to China and Canada. In every country they are hunted for their furs, which are very valuable, and chiefly so when taken in the beginning of winter. The most esteemed part of the martin's skin is that part of it which is browner than the rest, and stretches along the back-bone. About twelve thousand of these skins are annually imported into England from Hudson's Bay, and above thirty thousand from Canada.

THE SABLE.

Most of the classes of the weazel kind would have continued utterly unknown and disregarded were it not for their furs, which are finer, more

glossy and soft, than those of any other quadruped. Their dispositions are fierce and untameable; their scent generally offensive; and their figure disproportioned and unpleasing. The knowledge of one or two of them would, therefore, have sufficed curiosity; and the rest would probably have been confounded together, under one common name, as things useless and uninteresting, had not their skins been coveted by the vain, and considered as capable of adding to human magnificence or beauty.

Of all these, however, the skin of the sable is the most coveted, and held in the highest esteem. It is of a brownish-black, and the darker it is, it becomes the more valuable. A single skin, though not above four inches broad, is often valued at ten or fifteen pounds;* the fur differing from others in this, that it has no grain; so that, rub it which way you will, it is equally smooth and unresisting. Nevertheless, though this little animal's robe was so much coveted by the great, its history till of late was but very little known; and we are obliged to M. Jonelin for the first accurate description of its form and nature.† From him we learn that the sable resembles the martin in form and size, and the weazel in the number of its teeth; for it is to be observed, that whereas the martin has thirty-eight teeth, the weazel has but thirty-four; in this respect, therefore, the sable seems to make the shade between these two animals, being shaped like the one, and furnished with teeth like the other. It is also furnished with very large whiskers about the mouth; its feet are broad, and, as in the rest of its kind, furnished with five claws on each foot. These are its constant marks; but its fur, for which it is so much valued, is not always the same. Some of this species are of a dark brown

* Regnard. † Buffon, vol. xxvii, p. 113.

over all the body, except the ears and the throat, where the hair is rather yellow; others are more of a yellowish tincture, their ears and throat being also much paler. These in both are the colours they have in winter, and which they are seen to change in the beginning of the spring; the former becoming of a yellow-brown, and the latter of a pale yellow. In other respects they resemble their kind, in vivacity, agility, and inquietude; in sleeping by day and seeking their prey by night; in living upon smaller animals; and in the disagreeable odour that chiefly characterizes their race.

They generally inhabit along the banks of rivers, in shady places, and in the thickest woods. They leap with great ease from tree to tree, and are said to be afraid of the sun, which tarnishes the lustre of their robes. They are chiefly hunted in winter for their skins, during which part of the year only they are in season. They are mostly found in Siberia, and but very few in any other country of the world; and this scarcity it is which enhances their value. The hunting of the sable chiefly falls to the lot of the condemned criminals, who are sent from Russia into these wild and extensive forests, that for a great part of the year are covered with snow; and in this instance, as in many others, the luxuries and ornaments of the vain are wrought out of the dangers and the miseries of the wretched. These are obliged to furnish a certain number of skins every year, and are punished if the proper quantity be not provided.

The sable is also killed by the Russian soldiers, who are sent into those parts to that end. They are taxed a certain number of skins yearly, like the former, and are obliged to shoot with only a single ball, to avoid spoiling the skin, or else with a cross-bow and blunt arrows. As an encouragement to the hunters,

they are allowed to share among themselves the surplus of those skins which they thus procure; and this, in the course of six or seven years, amounts to a very considerable sum. A colonel, during his seven years' stay, gains about four thousand crowns for his share, and the common men six or seven hundred each for theirs.

THE ICHNEUMON.

THE Ichneumon, which some have injudiciously denominated the Cat of Pharaoh, is one of the boldest and most useful animals of all the weazel kind. In the kingdom of Egypt, where it is chiefly bred, it is used for the same purposes that cats are in Europe, and is even more serviceable, as being more expert in catching mice than they. This animal is usually of the size of the martin, and greatly resembles it in appearance, except that the hair, which is of a grisly black, is much rougher and less downy. The tail also is not so bushy at the end; and each hair in particular has three or four colours, which are seen in different dispositions of its body. Under its rougher hairs there is a softer fur of a brownish colour, the rough hair being about two inches long, but that of the muzzle extremely short, as likewise that on the legs and paws. However, being long since brought into a domestic state, there are many varieties in this animal; some being much larger than the martin, others much less; some being of a lighter mixture of colours, and some being streaked in the manner of a cat.

The ichneumon, with all the strength of a cat, has more instinct and agility; a more universal appetite for carnage, and a greater variety of powers

to procure it.* Rats, mice, birds, serpents, lizards, and insects are all equally pursued; it attacks every living thing which it is able to overcome, and indiscriminately preys on flesh of all kinds. Its courage is equal to the vehemence of its appetites. It fears neither the force of the dog nor the insidious malice of the cat; neither the claws of the vulture nor the poison of the viper. It makes war upon all kinds of serpents with great avidity, seizes and kills them how venomous soever they be; and we are told that when it begins to perceive the effects of their rage, it has recourse to a certain root, which the Indians call after its name, and assert to be an antidote for the bite of the asp or the viper.

But what this animal is particularly serviceable to the Egyptians for is, that it discovers and destroys the eggs of the crocodile. It also kills the young ones that have not as yet been able to reach the water; and, as fable usually goes hand in hand with truth, it is said that the ichneumon sometimes enters the mouth of the crocodile when it is found sleeping on the shore, boldly attacks the enemy in the inside, and at length, when it has effectually destroyed it, it eats its way out again.

The ichneumon when wild generally resides along the banks of rivers; and in times of inundation makes to the higher ground, often approaching inhabited places in quest of prey. It goes forward silently and cautiously, changing its manner of moving according to its necessities. Sometimes it carries the head high, shortens its body, and raises itself upon its legs; sometimes it lengthens itself, and seems to creep along the ground; it is often observed to sit upon its hind legs, like a dog when taught

* The rest of this description is extracted from M. Buffon, except where marked with commas.

to beg; but more commonly it is seen to dart like an arrow upon its prey, and sieze it with inevitable certainty. Its eyes are sprightly and full of fire, its physiognomy sensible, its body nimble, its tail long, and its hair rough and various. Like all of its kind, it has glands that open behind, and furnish an odorous substance. Its nose is too sharp and its mouth too small to permit its siezing things that are large; however, it makes up by its courage and activity its want of arms; it easily strangles a cat, though stronger and larger than itself; and often fights with dogs; which, though never so bold, learn to dread the ichneumon as a formidable enemy. It also takes the water like the otter, and, as we are told, will continue under it much longer.

This animal grows fast and dies soon. It is found in great numbers in all the southern parts of Asia, from Egypt to Java; and it is also found in Africa, particularly at the cape of Good Hope. It is domestic, as was said, in Egypt; but in our colder climate it is not easy to breed or maintain them, as they are not able to support the rigour of our winters. Nevertheless they take every precaution that instinct can dictate to keep themselves warm, they wrap themselves up into a ball, hiding the head between the legs, and in this manner continue to sleep all day long. "Seba had one sent him from the island of Ceylon, which he permitted to run for some months about the house. It was heavy and slothful by day, and often could not be awaked even with a blow; but it made up this indolence by its nocturnal activity, smelling about without either being wholly tame or wholly mischievous. It climbed up the walls and the trees with very great ease, and appeared extremely fond of spiders and worms, which it preferred, probably from their resemblance to serpents, its most natural food. It was also particularly eager to scratch

up holes in the ground; and this, added to its wildness and uncleanliness, obliged our naturalist to smother it in spirits in order to preserve it, and then added it to the rest of his collection.

This animal was one of those formerly worshipped by the Egyptians, who considered every thing that was serviceable to them as an emanation of the Deity, and worshipped such as the best representatives of God below. Indeed, if we consider the number of eggs which the crocodile lays in the sand at a time, which often amounts to three or four hundred, we have reason to admire this little animal's usefulness, as well as industry, in destroying them, since otherwise the crocodile might be produced in sufficient numbers to overrun the whole earth.

THE STINKARDS.

This is a name which our sailors give to one or two animals of the weasel kind, which are chiefly found in America. All the weasel kind, as was already observed, have a very strong smell; some of them indeed approaching to a perfume, but the greatest number most insupportably fetid. But the smell of our weasels, and ermines, and polecats, is fragrance itself, when compared to that of the *Squash* and the *Skink*, which have been called the polecats of America. These two are found in different parts of America, both differing in colour and fur, but both obviously of the weasel kind, as appears not only from their figure and odour, but also from their disposition. The squash is about the size of a polecat, its hair of a deep brown, but principally differing from all of this kind, in having only four toes on the feet before, whereas all other weasels have five. The

skink, which I take to be Catesby's Virginia Polecat, resembles a polecat in shape and size, but particularly differs in the length of its hair and colour. The hair is above three inches and a half long, and that at the end of the tail above four inches. The colour is partly black and partly white, variously disposed over the body, very glossy, long, and beautiful. There seem to be two varieties more of this animal, which M. Buffon calls the *Conepate* and the *Zorille*. He supposes each to be a distinct species; but as they are both said to resemble the polecat in form, and both to be clothed with long fur of a black and white colour, it seems needless to make a distinction. The conepate resembles the skink in all things, except in size, being smaller; and in the disposition of its colours, which are more exact, having five white stripes upon a black ground, running longitudinally from the head to the tail. The zorille resembles the skink, but is rather smaller, and more beautifully coloured, its streaks of black and white being more distinct, and the colours of its tail being black at its insertion, and white at the extremity, whereas in the skink they are all of one gray colour.

But whatever differences there may be in the figure or colour of these little animals, they all agree in one common affection, that of being intolerably fetid and loathsome. I have already observed, that all the weasel kind have glands furnishing an odorous matter, near the anus, the conduits of which generally have their aperture just at its opening. That substance which is stored up in these receptacles, is in some of this kind, such as in the martin, already mentioned, and also in the genette and the civet, to be described hereafter, a most grateful perfume: but in the weasel, the ermine, the ferret, and the polecat, it is extremely fetid and offensive. These glands in the animals now under consideration, are

much larger, and furnish a matter sublimed to a degree of putrescence that is truly amazing. As to the perfumes of musk and civet, we know that a single grain will diffuse itself over a whole house, and continue for months to spread an agreeable odour, without diminution. However, the perfume of the musk or the civet is nothing, either for strength or duration, to the insupportable odour of these. It is usually voided with their excrement; and if but a single drop happens to touch any part of a man's garment, it is more than probable that he can never wear any part of it more.

In describing the effects produced by the excrement of these animals, we often hear of its raising this diabolical smell by its urine. However, of this I am apt to doubt; and it should seem to me, that as all the weasel kind have their excrements so extremely fetid from the cause above mentioned, we may consider these also as being fetid from the same causes. Besides, they are not furnished with glands to give their urine such a smell; and the analogy between them and the weasel kind being so strong in other respects, we may suppose they resemble each other in this. It has also been said, that they take this method of ejecting their excrement to defend themselves against their pursuers; but it is much more probable, that this ejection is the convulsive effect of terror, and that it serves as their defence without their own concurrence. Certain it is, that they never smell thus horribly except when enraged or affrighted, for they are often kept tame about the houses of the planters of America without being very offensive.

The habitudes of all these animals are the same, living like all the rest of the weasel kind, as they prey upon smaller animals and birds' eggs. The squash, for instance, burrows like the polecat in the

clefts of rocks, where it brings forth its young. It often steals into farm-yards, and kills the poultry, eating only their brains. Nor is it safe to pursue or offend it, for then it calls up all its scents, which are its most powerful protection. At that time neither men nor dogs will offer to approach it; the scent is so strong, that it reaches for half a mile round, and more near at hand is almost stifling. If the dogs continue to pursue, it does all in its power to escape, by getting up a tree, or by some such means; but if driven to an extremity, it then lets fly upon the hunters: and if it should happen that a drop of this fetid discharge falls in the eye, the person runs the risk of being blinded for ever.*

The dogs themselves instantly abate of their ardour, when they find this extraordinary battery played off against them; they instantly turn tail, and leave the animal undisputed master of the field, and no exhortations can ever bring them to rally. "In the year 1749," says Kalm, "one of these animals came near the farm where I lived. It was in winter time, during the night; and the dogs that were upon the watch pursued it for some time, until it discharged against them. Although I was in my bed a good way off, I thought I should have been suffocated; and the cows and oxen, by their lowings, showed how much they were affected by the stench. About the end of the same year another of these animals crept into our cellar, but did not exhale the smallest scent, because it was not disturbed. A foolish woman, however, who perceived it at night by the shining of its eyes, killed it, and at that moment its stench began to spread. The whole cellar was filled with it to such a degree, that the woman kept her bed for several days after; and all the bread, meat, and other provisions, that were kept there, were so

* Voyage de Kalm, as quoted by Buffon, vol. xxvii, p. 93.

infected, that they were obliged to be thrown out of doors." Nevertheless, many of the planters, and the native Americans, keep this animal tame about their houses, and seldom perceive any disagreeable scents, except it is injured or frighted. They are also known to eat its flesh, which some assert to be tolerable food; however, they take care to deprive it of those glands which are so horridly offensive.

THE GENETTE.

From the squash, which is the most offensive animal in nature, we come to the Genette, which is one of the most beautiful and pleasing. Instead of the horrid stench with which the former affects us, this has a most grateful odour; more faint than civet, but to some, for that reason, more agreeable. This animal is rather less than the martin, though there are genettes of different sizes, and I have seen one rather larger. It also differs somewhat in the form of its body. It is not easy, in words, to give an idea of the distinction. It resembles all those of the weasel kind, in its length, compared to its height; it resembles them in having a soft beautiful fur, in having its feet armed with claws that cannot be sheathed, and in its appetite for petty carnage. But then it differs from them in having the nose much smaller and longer, rather resembling that of a fox than a weasel. The tail, also, instead of being bushy, tapers to a point, and is much longer; its ears are larger, and its paws smaller. As to its colours, and figure in general, the genette is spotted with black, upon a ground mixed with red and gray. It has two sorts of hair, the one shorter and softer, the other longer and stronger, but not above half an inch long,

on any part of its body, except the tail. Its spots are distinct and separate upon the sides, but unite towards the back, and form black stripes, which run longitudinally from the neck backwards. It has also along the back a kind of mane, or longish hair, which forms a black streak from the head to the tail; which last is marked with rings, alternately black and white, its whole length.

The genette, like all the rest of the weasel kinds, has glands that separate a kind of perfume, resembling civet, but which soon flies off. These glands open differently from those of other animals of this kind; for, as the latter have their apertures just at the opening of the anus, these have their aperture immediately under it; so that the male seems, for this reason, to the superficial observer, to be of two sexes.

It resembles the martin very much in its habits and disposition,* except that it seems tamed much more easily. Belonius assures us, that he has seen them in the houses at Constantinople as tame as cats; and that they were permitted to run every where about, without doing the least mischief. For this reason they have been called the *Cats of Constantinople*, although they have little else in common with that animal, except their skill in spying out and destroying vermin. Naturalists pretend that it inhabits only the moister grounds, and chiefly resides along the banks of rivers, having never been found in mountains nor dry places. The species is not much diffused: it is not to be found in any part of Europe, except Spain and Turkey; it requires a warm climate to subsist and multiply in; and yet it is not to be found in the warmer regions either of India or Africa. From such as have seen its uses at Constantinople, I learn, that it is one of the most

* Buffon, vol. xix, p. 187.

1. Libet 2. Civet 3. Genett 4. Peccary
5. Lesser Fernat Bat.

beautiful, cleanly, and industrious animals in the world; that it keeps whatever house it is in perfectly free from mice and rats, which cannot endure its smell. Add to this, its nature is mild and gentle, its colour various and glossy, its fur valuable; and, upon the whole, it seems to be one of those animals, that with proper care, might be propagated among us, and might become one of the most serviceable of our domestics.

THE CIVET.

Proceeding from the smaller to the greater of this kind, we come, in the last place, to the Civet, which is much larger than any of the former; for as the martin is not above sixteen inches long, the civet is found to be above thirty. M. Buffon distinguishes this species into two kinds, one of which he calls the *Civet*. and the other the *Zibet*. The latter principally differs from the former in having the body longer and more slender, the nose smaller, the ears longer and broader; no mane or long hair running down the back in the latter; and the tail is longer, and better marked with rings of different colours, from one end to the other. These are the differences which have induced this great naturalist to suppose them animals of distinct species, and to allot each a separate description. How far future experience may confirm this conjecture, time must discover; but certain it is, that if such small varieties make a separate class, there may be many other animals equally entitled to peculiar distinction that now are classed together. We shall therefore content ourselves at present with considering, as former naturalists have done, these two merely as varieties of

the same animal, and only altered in figure, by climate, food, or education.

The civet resembles animals of the weasel kind, in the long slenderness of its body, the shortness of its legs, the odorous matter that exudes from the glands behind, the softness of its fur, the number of its claws, and their incapacity of being sheathed. It differs from them in being much larger than any hitherto described; in having the nose lengthened, so as to resemble that of the fox, the tail long, and tapering to a point, and its ears straight, like those of a cat. The colour of the civet varies: it is commonly ash, spotted with black; though it is whiter in the female, tending to yellow; and the spots are much larger, like those of a panther. The colour on the belly and under the throat is black, whereas the other parts of the body are black or streaked with gray. This animal varies in its colour, being sometimes streaked, as in our kind of cats called *Tabbies*. It has whiskers, like the rest of its kind; and its eye is black and beautiful.

The opening of the pouch or bag which is the receptacle of the civet, differs from that of the rest of the weasel kind, not opening into, but under the anus. Besides this opening, which is large, there is still another lower down; but for what purposes designed, is not known. The pouch itself is about two inches and a half broad, and two long; its opening makes a chink from the top downwards, that is about two inches and a half long; and it is covered on the edges, and within, with short hair: when the two sides are drawn asunder, the inward cavity may be seen, large enough to hold a small pullet's egg; all round this are small glands, opening and furnishing that strong perfume, which is so well known, and is found, in this pouch, of the colour and consistence of pomatum. Those who make it their bu-

siness to breed these animals for their perfume, usually take it from them twice or thrice a-week, and sometimes oftener. The animal is kept in a long sort of a box, in which it cannot turn round. The person, therefore, opens this box behind, drags the animal backwards by the tail, keeps it in this position by a bar before, and with a wooden spoon takes the civet from the pouch as carefully as he can; then lets the tail go, and shuts the box again. The perfume thus procured is put into a vessel, which he takes care to keep shut; and when a sufficient quantity is procured, it is sold to very great advantage.

The civet,* although a native of the warmest climates, is found yet to live in temperate, and even cold countries, provided it be defended carefully from the injuries of the air. Wherefore it is not only bred among the Turks, the Indians, and Africans, but great numbers of these animals are also bred in Holland, where this scraping people make no small gain of its perfume. The perfume of Amsterdam is reckoned the purest of any; the people of other countries adulterating it with gums, and other matters, which diminish its value, but increase its weight. The quantity which a single animal affords generally depends upon its health and nourishment. It gives more in proportion as it is more delicately and abundantly fed. Raw flesh, hashed small, eggs, rice, birds, young fowls, and particularly fish, are the kinds of food the civet most delights in. These are to be changed and altered, to suit and entice its appetite, and continue its health. It gets but very little water; and although it drinks but rarely, yet it makes urine very frequently; and upon such occasions we cannot, as in other animals, distinguish the male from the female.

* Buffon, vol. xix.

The perfume of the civet is so strong, that it communicates itself to all parts of the animal's body; the fur is impregnated thereby, and the skin penetrated to such a degree, that it continues to preserve the odour for a long time after it is stript off. If a person be shut up with one of them in a close room, he cannot support the perfume, which is so copiously diffused. When the animal is irritated, as in all the weasel kind, its scent is much more violent than ordinary; and if it be tormented so as to make it sweat, this also is a strong perfume, and serves to adulterate or increase what is otherwise obtained from it. In general it is sold in Holland for about fifty shillings an ounce; although, like all other commodities, its value alters in proportion to the demand. Civet must be chosen new, of a good consistence, a whitish colour, and a strong disagreeable smell. There is still a very considerable traffic carried on from Bussorah, Calicut, and other places in India, where the animal that produces it is bred; from the Levant also, from Guinea, and especially from Brasil, in South America, although M. Buffon is of opinion that the animal is a native only of the Old Continent, and not to be found wild in the New. The best civet, however, is furnished, as was observed, by the Dutch, though not in such quantities at present as some years past, when this perfume was more in fashion. Civet is a much more grateful perfume than musk, to which it has some resemblance, and was some years ago used for the same purposes in medicine; but at present it is quite discontinued in prescription, and persons of taste or elegance seem to proscribe it even from the toilet. Perfumes, like dress, have their vicissitudes; musk was in peculiar repute, until displaced, by civet; both gave ground, upon discovering the manner of preparing ambergrise; and even this is now disused, for the

less powerful vegetable kinds of fragrance, spirits of lavender, or ottar of roses.

As to the rest, the civet is said to be a wild fierce animal; and although sometimes tamed, is never thoroughly familiar. Its teeth are strong and cutting, although its claws be feeble and flexible It is light and active, and lives by prey, as the rest of its kind, pursuing birds and other small animals that it is able to overcome. They are sometimes seen stealing into the yards and out-houses, to seize upon the poultry: their eyes shine in the night, and it is very probable that they see better in the dark than by day. When they fail of animal food, they are found to subsist upon roots and fruits, and very seldom drink: for which reason they are never found near great waters. They breed very fast in their native climates, where the heat seems to conduce to their propagation; but in our temperate latitudes, although they furnish their perfume in great quantities, yet they are not found to multiply;—a proof that their perfume has no analogy with their appetite for generation.

THE GLUTTON.

I WILL add but one animal more to this numerous class of the weasel kind, namely, the Glutton, which, for several reasons seems to belong to this tribe, and this only. We have hitherto had no precise description of this quadruped; some resembling it to a badger, some to a fox, and some to a hyæna. Linnæus places it among the weasels, from the similitude of its teeth: it should seem to me to resemble this animal still more, from the great length of its body, and the shortness of its legs, from the softness of its fur, its disagreeable scent, and its insatiable

appetite for animal food. M. Klein, who saw one of them which was brought alive from Siberia, assures us, that it was about three feet long,* and about a foot and a half high. If we compare these dimensions with those of other animals, we shall find that they approach more nearly to the class we are at present describing than any other; and that the glutton may very justly be conceived under the form of a great overgrown weasel. Its nose, its ears, its teeth, and its long bushy tail, are entirely similar; and as to what is said of its being rather corpulent than slender, it is most probable that those who described it thus, saw it after eating, at which time its belly, we are assured, is most monstrously distended: however, suspending all certainty upon this subject, I will take leave rather to follow Linnæus than Buffon in describing this animal, and leave future experience to judge between them.

The Glutton, which is so called from its voracious appetite, is an animal found as well in the north of Europe and Siberia, as in the north parts of America, where it has the name of the *Carcajou*. Amidst the variety of descriptions which have been given of it, no very just idea can be formed of its figure; and indeed some naturalists, among whom was Ray, entirely doubted of its existence. From the best accounts, however, we have of it, the body is thick and long, the legs short; it is black along the back, and of a reddish-brown on the sides; its fur is held in the highest estimation, for its softness and beautiful gloss; the tail is bushy, like that of the weasel, but rather shorter; and its legs and claws are better fitted for climbing trees, than for running along the ground. Thus far it entirely resembles the weasel;

* He says it was one ell eight inches long; I have, therefore, given its length, as supposing it to be a Flemish ell, which is twenty-seven inches.

and its manner of taking its prey is also by surprise, and not by pursuit.

Scarcely any of the animals with short legs and long bodies pursue their prey; but, knowing their own incapacity to overtake it by swiftness, either creep upon it in its retreats, or wait in ambush, and seize it with a bound. The glutton, from the make of its legs, and the length of its body, must be particularly slow; and, consequently, its only resource is in taking its prey by surprise. All the rest of the weasel kind, from the smallness of their size, are better fitted for a life of insidious rapine than this; they can pursue their prey into its retreats, they can lurk unseen among the branches of trees, and hide themselves with ease under the leaves; but the glutton is too large to follow small prey into their retreats; nor would such, even if obtained, be sufficient to sustain it. For these reasons, therefore, this animal seems naturally compelled to the life for which it has long been remarkable. Its only resource is to climb a tree, which it does with great ease, and there it waits with patience until some large animal passes underneath, upon which it darts down with unerring certainty, and destroys it.

It is chiefly in North America that this voracious creature is seen lurking among the thick branches of trees, in order to surprise the deer, with which the extensive forests of that part of the world abound. Endued with a degree of patience equal to its rapacity, the glutton singles out such trees as it observes marked by the teeth or the antlers of the deer; and is known to remain there watching for several days together. If it has fixed upon a wrong tree, and finds that the deer have either left that part of the country, or cautiously shun the place, it reluctantly descends, pursues the beaver to its retreat, or even ventures into the water in pursuit of fishes. But if

it happens that, by long attention and keeping close, at last the elk or the rein-deer happens to pass that way, it at once darts down upon them, sticks its claws between their shoulders, and remains there unalterably firm. It is in vain that the large frighted animal increases its speed, or threatens with its branching horns; the glutton having taken possession of its post, nothing can drive it off; its enormous prey drives rapidly along amongst the thickest wood, rubs itself against the largest trees, and tears down the branches with its expanded horns; but still its insatiable foe sticks behind, eating its neck, and digging its passage to the great blood-vessels that lie in that part. Travellers who wander through those deserts, often see pieces of the glutton's skin sticking to the trees, against which it was rubbed by the deer. But the animal's voracity is greater than its feelings, and it never seizes without bringing down its prey. When, therefore, the deer, wounded and feeble with the loss of blood, falls, the glutton is seen to make up for its former abstinence by its present voracity. As it is not possessed of a feast of this kind every day, it resolves to lay in a store to serve it for a good while to come. It is indeed amazing how much one of these animals can eat at a time. That which was seen by M. Klein, although without exercise or air, although taken from its native climate, and enjoying but an indifferent state of health, was yet seen to eat thirteen pounds of flesh every day, and yet remain unsatisfied. We may, therefore, easily conceive how much more it must devour at once, after a long fast, of a food of its own procuring, and in the climate most natural to its constitution. We are told, accordingly, that from being a lank, thin animal, which it naturally is, it then gorges in such quantities, that its belly is distended, and its whole figure seems to alter. Thus voraciously it

continues eating, till, incapable of any other animal function, it lies totally torpid by the animal it has killed, and in this situation continues for two or three days. In this loathsome and helpless state it finds its chief protection from its horrid smell, which few animals care to come near;* so that it continues eating and sleeping till its prey be devoured, bones and all; and then it mounts a tree, in quest of another adventure.

The glutton, like many others of the weasel kind, seems to prefer the most putrid flesh to that newly killed; and such is the voraciousness of this hateful creature, that if its swiftness and strength were equal to its rapacity, it would soon thin the forest of every other living creature. But fortunately it is so slow, that there is scarcely a quadruped that cannot escape it, except the beaver. This, therefore, it very frequently pursues upon land; but the beaver generally makes good its retreat by taking to the water, where the glutton has no chance to succeed. This pursuit only happens in summer; for in winter all that remains is to attack the beaver's house, as at that time it never stirs from home. This attack, however, seldom succeeds; for the beaver has a covert way bored under the ice, and the glutton has only the trouble and disappointment of sacking an empty town.

A life of necessity generally produces a good fertile invention. The glutton continually pressed by the call of appetite, and having neither swiftness nor activity to satisfy it, is obliged to make up by stratagem the defects of nature. It is often seen to examine the traps and the snares laid for other animals, in order to anticipate the fowlers. It is said to practise a thousand arts to procure its prey; to steal upon the retreats of the rein-deer, the flesh of which

* Linnæi Systema, p. 67.

animal it loves in preference to all others; to lie in wait for such animals as have been maimed by the hunters; to pursue the isatis while it is hunting for itself; and, when that animal has run down its prey, to come in and seize upon the whole, and sometimes to devour even its poor provider: when these pursuits fail, even to dig up the graves, and fall upon the bodies interred there, devouring them, bones and all. For these reasons, the natives of the countries where the glutton inhabits hold it in utter detestation, and usually term it the vulture of quadrupeds. And yet it is extraordinary enough, that being so very obnoxious to man, it does not seem to fear him.* We are told by Gmelin of one of these coming up boldly and calmly where there were several persons at work, without testifying the smallest apprehension, or attempting to run, until it had received several blows that at last totally disabled it. In all probability it came among them seeking its prey; and having been used to attack animals of inferior strength, it had no idea of a force superior to its own. The glutton, like all the rest of its kind, is a solitary animal, and is never seen in company except with its female, with which it couples in the midst of winter. The latter goes with young about four months, and brings forth two or three at a time.† They burrow in holes as the weasel; and the male and female are generally found together, both equally resolute in defence of their young. Upon this occasion, the boldest dogs are afraid to approach them; they fight obstinately, and bite most cruelly. However, as they are unable to escape by flight, the hunters come to the assistance of the dogs, and easily overpower them. Their flesh, it may readily be supposed, is not fit to be eaten; but the skins amply recompense the hunters for their toil and danger.

* Buffon. † Linnæi Systema, p. 67.

The fur has the most beautiful lustre that can be imagined, and is preferred before all others, except that of the Siberian fox or the sable. Among other peculiarities of this animal, Linnæus informs us that it is very difficult to be skinned; but from what cause, whether its abominable stench, or the skin's tenacity to the flesh, he has not thought fit to inform us.*

[EL FENNEC.

A BEAUTIFUL species of weasel, as it is universally considered by the Arabians, is described by Mr. Bruce under the name of El Fennec. It is about ten inches long from the snout to the tail; the tail near five inches and a quarter, and about half an inch of it black at the tip. From the point of the fore-shoulder to the point of the fore-toe it is two inches and seven-eights; from the occiput to the point of the nose, two inches and a half; and the ears are three inches and three-eighths in length, and about an inch and a half in breadth, with the cavities very large. They are doubled, and have a plait on the outside; the border of the inside is thick and covered with white soft hair, the middle part being bare and of a rose or pink colour. The pupil of the eye is large and black, surrounded with a deep

[* A variety of this species in North America, called the *Wolverene*, is found near Hudson's Bay, and in Canada, as far as the Straits of Michilimakinac. This animal is distinguished from the glutton by its superior size, and colour. It has a black sharp-pointed visage; short rounded ears, almost hid in the hairs; the sides of a yellowish-brown, which passes in form of a band quite over the hind part of the back, above the tail: the legs are very strong, thick, and short, of a deep black; the whole body is covered with long and thick hair, which varies in colour according to the season; but the fur of the glutton is much finer, blacker, and more glossy than that of the wolverene. By modern naturalists they are classed as varieties of the bear.]

blue iris; the mustachoes are thick and strong; the tip of the nose is very sharp, black, and polished. There are four grinders on each side of the mouth, six fore-teeth in each jaw, and the upper jaw projected beyond the lower one. The canine teeth are large, long, and very sharp-pointed; the legs small, and the feet broad, with four toes armed with short, black, sharp retractile claws; those on the fore-feet being sharper than those behind. The whole body of the animal is of a dirty white, approaching to cream colour: the hair of the belly rather whiter, longer, and softer than the rest, with a number of paps upon it.

Mr. Bruce obtained one of these animals by means of a Turkish foot-soldier returned from Biscara, a southern district of Mauritania Cæsariensis, now called the Province of Constantina. According to his account, they are not uncommon in this district, though more frequently to be met with in the neighbouring date territories of Beni Mezab and Werglab, the residence of the ancient Melano-Gætuli. In the Werglab, the animals are hunted for their skins, which are sold at Mecca, and afterwards exported to India. Mr. Bruce kept this one for several months at his country-house near Algiers, that he might learn its manners. Its favourite food, he tells us, was dates or other sweet fruit, yet it was also very fond of eggs. It devoured those of pigeons and small birds with great avidity when first brought to him; but did not seem to know how to manage hen's eggs, though, when they were broken to him, he ate the contents with as great avidity as the others. When hungry, he would eat bread, especially with honey or sugar. His attention was greatly engrossed by the sight of any bird flying across the room where he was, or confined in a cage near him, and could not be diverted from viewing it by plac-

ing biscuit before him; so that it seems probable that he preys upon them in his wild state. He was extremely impatient of having his ears touched, so that it was with much difficulty that they could be measured; and, on account of this impatience, it was found impossible to count the protuberances or paps on his belly. He seemed very much frightened at the sight of a cat; and endeavoured to hide himself, though he did not appear to meditate any defence. On this occasion also he lowered his ears, which at other times he kept erect. Notwithstanding his impatience, he would suffer himself, though with difficulty, to be handled in the day-time; but in the night he was extremely restless, always endeavouring to make his escape; and though he did not attempt the wire, yet with his sharp teeth he would soon have made his way through a wooden cage, as two others which they attempted to bring along with him actually did. These animals are very swift of foot. They build their nests in trees, particularly the palms, of which they eat the fruit, feeding also on locusts and other insects, and perhaps sometimes preying upon small birds. Its exact place in the zoological system has not yet been ascertained, some naturalists considering it as a species of dog.]

CHAPTER XVIII.

ANIMALS OF THE HARE KIND.

HAVING described, in the last chapter, a tribe of minute, fierce, rapacious animals, I come now to a race of minute animals of a more harmless and gentle kind, that, without being enemies to any, are prey-

ed upon by all. As nature has fitted the former for hostility, so it has entirely formed the latter for evasion; and as the one kind subsist by their courage and activity, so the other find safety from their swiftness and their fears. The Hare is the swiftest animal in the world for the time it continues; and few quadrupeds can overtake even the rabbit when it has but a short way to run. To this class also we may add the squirrel, somewhat resembling the hare and rabbit in its form and nature, and equally pretty, inoffensive, and pleasing.

If we were methodically to distinguish animals of the hare kind from all others, we might say that they have but two cutting teeth above and two below, that they are covered with a soft downy fur, and that they have a bushy tail.* The combination of these marks might perhaps distinguish them tolerably well, whether from the rat, the beaver, the otter, or any other most nearly approaching in form. But as I have declined all method that rather tends to embarrass history than enlighten it, I am contented to class these animals together, for no very precise reason, but because I find a general resemblance between them in their natural habits, and in the shape of their heads and body. I call a squirrel an animal of the hare kind, because it is something like a hare. I call the Paca of the same kind, merely because it is more like a rabbit than any other animal I know of. In short, it is fit to erect some particular standard in the imagination of the reader, to refer him to some animal that he knows, in order to direct him in conceiving the figure of such as he does not know. Still, however, he should be apprized, that his knowledge will be defective without an examination of each particular species; and that saying an animal

[* This class of animals have two fore-teeth in each jaw: those in the upper jaw are double, the interior ones being smallest.]

is of this or that particular kind, is but a very trifling part of its history.

Animals of the hare kind, like all others that feed entirely upon vegetables, are inoffensive and timorous. As nature furnishes them with a most abundant supply, they have not that rapacity after food remarkable in such as are often stinted in their provision. They are extremely active, and amazingly swift, to which they chiefly owe their protection; for being the prey of every voracious animal, they are incessantly pursued. The hare, the rabbit, and the squirrel, are placed by Pyerius, in his Treatise of Ruminating Animals, among the number of those that chew the cud; but how far this may be true, I will not pretend to determine. Certain it is that their lips continually move whether sleeping or waking. Nevertheless, they chew their meat very much before they swallow it, and for that reason I should suppose that it does not want a second mastication. All these animals use their fore-paws like hands; they are remarkably salacious, and are furnished by nature with more ample powers than most others for the business of propagation. They are so very prolific, that were they not thinned by the constant depredations made upon them by most other animals, they would quickly overrun the earth.

THE HARE.

Of all these, the hare is the largest, the most persecuted, and the most timorous; all its muscles are formed for swiftness, and all its senses seem only given to direct its flight. It has very large prominent eyes, placed backwards in its head, so that it can almost see behind as it runs. These are never

wholly closed; but as the animal is continually upon the watch, it sleeps with them open. The ears are still more remarkable for their size; they are moveable, and capable of being directed to every quarter; so that the smallest sounds are readily received, and the animal's motions directed accordingly. The muscles of the body are very strong, and without fat, so that it may be said to carry no superfluous burden of flesh about it; the hinder feet are longer than the fore, which still adds to the rapidity of its motions; and almost all animals that are remarkable for their speed, except the horse, are formed in the same manner.

An animal so well formed for a life of escape, might be supposed to enjoy a state of tolerable security; but as every rapacious creature is its enemy, it but very seldom lives out its natural term. Dogs of all kinds pursue it by instinct, and follow the hare more eagerly than any other animal. The cat and the weasel kinds are continually lying in ambush, and practising all their little arts to seize it; birds of prey are still more dangerous enemies, as against them no swiftness can avail, nor retreat secure: but man, an enemy far more powerful than all, prefers its flesh to that of other animals, and destroys greater numbers than all the rest. Thus pursued and persecuted on every side, the race would long since have been totally extirpated, did it not find a resource in its amazing fertility.

The hare multiplies exceedingly; it is in a state of engendering at a few months old; the females go with young but thirty days, and generally bring forth three or four at a time.* As soon as they have produced their young, they are again ready for conception, and thus do not lose any time in continuing the breed. But they are in another respect fitted in an

* Buffon, vol. xiii, p. 12.

extraordinary manner for multiplying their kind; for the female, from the conformation of her womb, is often seen to bring forth, and yet to continue pregnant at the same time; or, in other words, to have young ones of different ages in her womb together. Other animals never receive the male when pregnant, but bring forth their young at once. But it is frequently different with the hare; the female often, though already impregnated, admitting the male, and thus receiving a second impregnation. The reason of this extraordinary circumstance is, that the womb in these animals is divided in such a manner that it may be considered as a double organ, one side of which may be filled while the other remains empty. Thus these animals may be seen to couple at every period of their pregnancy, and, even while they are bringing forth young, laying the foundation of another brood.

The young of these animals are brought forth with their eyes open, and the dam suckles them for twenty days, after which they leave her, and seek out for themselves.* From this we observe, that the education these animals receive is but trifling, and the family connexion but of a short duration. In the rapacious kinds the dam leads her young forth for months together; teaches them the arts of rapine; and, although she wants milk to supply them, yet keeps them under her care until they are able to hunt for themselves. But a long connexion of this kind would be very unnecessary as well as dangerous to the timid animals we are describing; their food is easily procured; and their associations, instead of protection, would only expose them to their pursuers. They seldom, however, separate far from each other, or from the place where they were produced; but make each a form at some distance, hav-

* Buffon, vol. xiii, p. 12.

ing a predilection rather for the place than each other's society. They feed during the night rather than by day, choosing the most tender blades of grass, and quenching their thirst with the dew. They live also upon roots, leaves, fruits, and corn, and prefer such plants as are furnished with a milky juice. They also strip the bark of trees during the winter, there being scarcely any that they will not feed on, except the lime or the alder. They are particulalry fond of birch, pinks, and parsley. When they are kept tame, they are fed with lettuce and other garden herbs; but the flesh of such as are thus brought up is always indifferent.

They sleep or repose in their forms by day, and may be said to live only by night.* It is then that they go forth to feed and couple. They do not pair, however, but in the rutting season, which begins in February; the male pursues and discovers the female by the sagacity of its nose. They are then seen, by moon-light, playing, skipping, and pursuing each other; but the least motion, the slightest breeze, the falling of a leaf, is sufficient to disturb their revels; they instantly fly off, and each takes a separate way. As their limbs are made for running, they easily outstrip all other animals in the beginning; and could they preserve their speed, it would be impossible to overtake them: but as they exhaust their strength at their first efforts, and double back to the place they were started from, they are more easily taken than the fox, which is a much slower animal than they. As their hind-legs are longer than the fore, they always choose to turn up-hill, by which the speed of their pursuers is diminished, while theirs remains the same. Their motions are also without any noise, as they have the sole of the foot furnished with hair; and they seem the only animals that have hair on the inside of their mouths.

* Buffon, vol. xiii, p. 12.

They seldom live above seven or eight years at the utmost; they come to their full perfection in a year; and this, multiplied by seven, as in other animals, gives the extent of their lives.* It is said, however, that the females live longer than the males: of this M. Buffon makes a doubt; but I am assured that it is so. They pass their lives, in our climate, in solitude and silence; and they seldom are heard to cry, except when they are seized or wounded. Their voice is not so sharp as the note of some other animals, but more nearly approaching that of the squalling of a child: They are not so wild as their dispositions and their habits seem to indicate; but are of a complying nature, and easily susceptible of a kind of education. They are easily tamed. They even become fond and caressing, but they are incapable of attachment to any particular person; and never can be depended upon: for though taken never so young, they regain their native freedom at the first opportunity. As they have a remarkably good ear, and sit upon their hind-legs, and use their fore-paws as hands, they have been taught to beat the drum, to dance to music, and go through the manual exercise.

But their natural instincts for their preservation, are much more extraordinary than those artificial tricks that are taught them. They make themselves a form particularly in those places where the colour of the grass most resembles that of their skin; it is open to the south in winter, and to the north in summer. The hare, when it hears the hounds at a distance, flies for some time through a natural impulse, without managing its strength, or consulting any other means but speed for its safety. Having attained some hill or rising ground, and left the dogs so far behind that it no longer hears their cries, it

* Buffon, vol. xiii, p. 12.

stops, rears on its hinder legs, and at length looks back to see if it has not lost its pursuers. But these, having once fallen upon the scent, pursue slowly, and with united skill; and the poor animal soon again hears the fatal tidings of their approach. Sometimes, when sore hunted, it will start a fresh hare, and squat in the same form; sometimes it will creep under the door of a sheep-cot, and hide among the sheep; sometimes it will run among them, and no vigilance can drive it from the flock; some will enter holes like the rabbit, which the hunters call going to *vault;* some will go up one side of the hedge, and come down the other; and it has been known, that a hare sorely hunted has got upon the top of a quick-set hedge, and run a good way thereon, by which it has effectually evaded the hounds. It is no unusual thing also for them to betake themselves to furze bushes, and to leap from one to another by which the dogs are frequently misled. However, the first doubling a hare makes is generally a key to all its future attempts of that kind, the latter being exactly like the former. The young hares tread heavier, and leave a stronger scent, than the old, because their limbs are weaker; and the more this forlorn creature tires, the heavier it treads, and the stronger is the scent it leaves. A buck, or male hare, is known by its choosing to run upon hard highways, feeding farther from the wood sides, and making its doublings of a greater compass than the female. The male having made a turn or two about its form, frequently leads the hounds five or six miles on a stretch; but the female keeps close by some covert side, turns, crosses, and winds among the bushes like a rabbit, and seldom runs directly forward. In general, however, both male and female regulate their conduct according to the weather. In a moist day they hold

by the highways more than at any other time, because the scent is then strongest upon the grass. If they come to the side of a grove or spring, they forbear to enter, but squat down by the side thereof, until the hounds have overshot them; and then, turning along their former path, make to their old form, from which they vainly hope for protection.

Hares are divided, by the hunters, into mountain and measled hares. The former are more swift, vigorous, and have their flesh better tasted; the latter chiefly frequent the marshes, when hunted keep among low grounds, and their flesh is moist, white, and flabby. When the male and female keep one particular spot, they will not suffer any strange hare to make its form in the same quarter; so that it is usually said, that the more you hunt, the more hares you shall have; for, having killed one hare, others come and take possession of its form. Many of these animals are found to live in woods and thickets; but they are naturally fonder of the open country, and are constrained only by fear to take shelter in places that afford them neither a warm sun, nor an agreeable pasture. They are, therefore, usually seen stealing out of the edges of the wood, to taste the grass that grows shorter and sweeter in the open fields than under the shade of the trees; however, they seldom miss of being pursued, and every excursion is a new adventure. They are shot at by poachers; traced by their footsteps in the snow; caught in springes; dogs, birds, and cats, are all combined against them; ants, snakes, and adders, drive them from their forms; especially in summer; even fleas, from which most other animals are free, persecute this poor creature; and so various are its enemies, that it is seldom permitted to reach even that short term to which it is limited by nature.

The soil and climate have their influence upon

this animal, as well as on most others. In the countries bordering on the north pole, they become white in winter, and are often seen in great troops of four or five hundred, running along the banks of the river Irtish, or the Jenisca, and are white as the snow they tread on. They are caught in traps, for the sake of their skins, which, on the spot, are sold for less than seven shillings a hundred. Their fur is well known to form a considerable article in the hat manufacture; and we accordingly import vast quantities of it from those countries where the hare abounds in such plenty. They are found also entirely black, but these in much less quantities than the former;* and even some have been seen with horns, though these but rarely.†

The hares of the hot countries, particularly in Italy, Spain, and Barbary, are smaller than ours: those bred in the Milanese country are said to be the best in Europe.‡ There is scarcely a country where this animal is not to be found, from the torrid zone to the neighbourhood of the polar circle. The natives of Guinea knock them on the head as they come down to the sides of the rivers to drink. They also surround the place where they are seen in numbers, and clattering a short stick, which every man carries, against that which the person next him carries, they diminish their circle gradually, till the hares are cooped up in the midst They then all together throw their sticks in among them and with such deadly force that they seldom fail of killing great numbers at a time.§

The flesh of this animal has been esteemed as a delicacy among some nations, and is held in detestation by others. The Jews, the ancient Britons, and the Mahometans, all considered it as an unclean animal,

* Klein, Disp. Quadrup. p. 52. † Johnston de Qadrup. lib. ii, cap. 2.
‡ Dict. Raisonné, *Lièvre.* § Hist. Gen. des Voy. t. iv, p. 171.

and religiously abstained from it. On the contrary, there are scarcely any other people, however barbarous at present, that do not consider it as the most agreeable food. Fashion seems to preside and govern all the senses: what mankind at one time consider as beautiful, fragrant, or savoury, may at another time, or among other nations, be regarded as deformed, disgustful, or ill tasted. That flesh which the ancient Romans so much admired as to call it the food of the wise, was, among the Jews and the druids, thought unfit to be eaten; and even the moderns, who like the Romans, consider the flesh of this animal as a delicacy, have very different ideas as to dressing it. With us it is simply served up without much seasoning; but Apicius shows us the manner of dressing a hare in true Roman taste, with parsley, rice, vinegar, cummin seed, and coriander.*

[The Varying Hare has soft hair, which in summer is gray, with a slight mixture of black and tawny: the ears are shorter, and the legs more slender, than those of the common hare; the tail is entirely white, even in summer; and the feet are more closely and warmly furred. In winter, the whole animal changes to a snowy whiteness, except the tips and edges of the ears, which remain black, as are the soles of the feet, on which, in Siberia, the fur is doubly thick, and of a yellow colour. It is less than the common species.—These animals inhabit the highest Scotish Alps, Norway, Lapland, Russia, Siberia, Kamtschatka, and the banks of the Wolga and Hudson's Bay. In Scotland, they keep on the tops of the highest hills, and never descend into the vales; nor do they ever mix with the common hare, though these abound in their neighbourhood. They do not run fast; and are apt to take shelter in

* Vid. Apicii, &c.

clefts of rocks. They are easily tamed, and are full of frolic. This species changes its colour in September; resumes its gray coat in April; and in the extreme cold of Greenland only is always white. They collect together, and are seen in troops of five or six hundred migrating in spring, and returning in autumn. They are compelled to this by the want of subsistence; quitting in the winter the lofty hills, and seeking the plains and wooded parts, where vegetables abound; and in spring they again seek the mountainous quarters.

The American Hare, or hedge-coney, has the ears tipt with gray; the upper part of the tail is black, the lower white; the neck and body are mixed with cinereous, rust-colour, and black; the legs are of a pale ferruginous colour; and the belly is white; the forelegs are shorter, and the hind-legs longer, in proportion, than those of the common hare. In length it is eighteen inches; and weighs from three to four and a half pounds. This species inhabits all parts of North America. In New Jersey, and to the south of that state, it retains its colour the whole year. In New England, Canada, and about Hudson's Bay, at the approach of winter, it changes its short summer's fur for one very long, silky, and silvery, even to the roots of the hair; the edges of the ears only preserving their colour.

The Baikal Hare has a tail longer than that of a rabbit; and the ears are longer in the male in proportion than those of the varying hare: the fur is of the colour of the common hare; and the size, between that of the common and the varying hare. It inhabits the country beyond Lake Baikal, and extends through the Great Gobèe, even to Thibet. It agrees with the common rabbit in colour of the flesh; but does not burrow, running instantly (without taking a ring, as the common hare does,) for shelter,

when pursued, into holes of rocks. The fur is bad, and of no use in commerce.

The Cape Hare has long ears dilated in the middle; the outsides naked, and of a rose colour, the inside and edges covered with short gray hairs; the crown and back are of a dusky colour, mixed with tawny; the cheeks and sides cinereous; the breast, belly, and legs, rust-coloured; the tail is bushy, carried upwards, and of a pale ferruginous colour. The animal is about the size of a rabbit. It inhabits the country three days north of the Cape of Good Hope, where it is called the *Mountain Hare*, for it lives only in the rocky mountains, and does not burrow. It is difficult to shoot it, as it instantly, on the sight of any one, runs into the fissures of the rocks.

The Alpine Hare has short, broad, rounded ears; a long head, and very long whiskers, with two very long hairs above each eye: the colour of the fur at the bottom is dusky, towards the ends of a bright ferruginous colour; the tips white, and intermixed with several long dusky hairs, though on first inspection the whole seems of a bright bay. The length of the animal is nine inches. This species is first seen on the Altaic chain; extends to Lake Baikal; from thence to Kamtschatka; and, as is said, is found in the newly discovered Fox or Aleutian Islands. They inhabit always the middle region of the snowy mountains, in the rudest places, wooded and abounding with herbs and moisture. They sometimes form burrows between the rocks, and oftener lodge in the crevices. They are generally found in pairs; but in cloudy weather they collect together, lie on the rocks, and give a keen whistle, so like that of a sparrow as to deceive the hearer. By wonderful instinct they make a provision against the rigorous season in their inclement seats. A company of them, towards autumn, collect together vast heaps of choice herbs and

grasses, well dried, which they place either beneath the over-hanging rocks, or between the chasms, or round the trunk of some tree. The way to these heaps is marked by a worn path. In many places the herbs appear scattered, as if to be dried in the sun, and harvested properly. The heaps are formed like round or conoid ricks, and are of various sizes, according to the number of the society employed in forming them. They are sometimes of a man's height, and many feet in diameter, but usually about three feet. Without this provision of winter's stock they must perish, being prevented by the depth of snow from quitting their retreats in quest of food. They select the best of vegetables, and crop them when in the fullest vigour, which they make into the best and greenest hay by the judicious manner in which they dry it. These ricks are the origin of fertility amidst the rocks; for the reliques, mixed with the dung of the animals, rot in the barren chasms, and create a soil productive of vegetables. These ricks are also of great service to those people who devote themselves to the laborious employment of sable-hunting; for being obliged to go far from home, their horses would often perish for want if they had not the provision of these little industrious animals to support them; which is easily to be discovered by their height and form, even when covered with snow. It is for this reason that this little creature has a name among every Siberian and Tartarian nation, which otherwise would have been overlooked and despised. The people of Jakutz are said to feed both their horses and cattle with the reliques of the winter stock of these hares. These animals are neglected as a food by mankind, but are the prey of sables and the Siberian weasel, which are joint inhabitants of the mountains. They are likewise greatly infested by a sort of gadfly, which lodges its egg in their skin

in August and September, and often proves destructive to them.

The Calling Hare has a long head, thickly covered with fur, even to the tip of the nose; numerous hairs in the whiskers; ears large and rounded; legs very short, and the soles furred beneath: its whole coat is very soft, long, and smooth, with a thick, long, fine down beneath, of a brownish lead-colour; the hairs are of the same colour, towards the ends of a light gray, and tipt with black: the lower part of the body is hoary; the sides and ends of the fur are yellowish. The length of the animal is about six inches. This species inhabits the south-east parts of Russia, and about all the ridge of hills spreading southward from the Uralian chain; also about the Irtish, and in the west part of the Altaic chain; but no where in the east beyond the Oby. They delight in the most sunny valleys and herby hills, especially near the edges of woods, to which they run on any alarm. They live in so concealed a manner as very rarely to be seen; but are often taken in winter in the snares laid for the ermine, so are well known to the hunters. They choose for their habitations a dry spot, amidst bushes covered with a firm sod, preferring the western sides of the hills. In these they burrow, leaving a very small hole for the entrance, and forming long galleries, in which they make their nests. Those of the old ones and females are numerous and intricate, so that their place would be scarcely known but for their excrements, and even those they drop, by a wise instinct, under some bush, lest their dwelling should be discovered by their enemies among the animal creation. Their voice alone betrays their abode; it is like the piping of a quail, but deeper, and so loud as to be heard at a distance of half a German mile.]

THE RABBIT.

The Hare and the Rabbit, though so very nearly resembling each other in form and disposition, are yet distinct kinds, as they refuse to mix with each other. M. Buffon bred up several of both kinds in the same place; but from being at first indifferent, they soon became enemies, and their combats were generally continued until one of them was disabled or destroyed. However, though these experiments were not attended with success, I am assured that nothing is more frequent than an animal bred between these two, but which, like the mule, is marked with sterility. Nay, it has been actually known that the rabbit couples with animals of a much more distant nature; and there is at present, in the Museum at Brussels, a creature covered with feathers and hair, and said to be bred between a rabbit and a hen.

The fecundity of the rabbit is still greater than that of the hare; and if we should calculate the produce from a single pair, in one year, the number would be amazing. They breed seven times in a year, and bring forth eight young ones each time. On a supposition, therefore, that this happens regularly, at the end of four years a couple of rabbits shall see a progeny of almost a million and a half. From hence we might justly apprehend being overstocked by their increase; but, happily for mankind, their enemies are numerous, and their nature inoffensive; so that their destruction bears a near proportion to their fertility.

But although their numbers be diminished by every beast and bird of prey, and still more by man himself, yet there is no danger of their extirpation. The hare is a poor defenceless animal, that has

nothing but its swiftness to depend on for safety; its numbers are, therefore, every day decreasing; and in countries that are well peopled, the species are so much kept under, that laws are made for their preservation. Still, however, it is most likely that they will be at last totally destroyed; and like the wolf or the elk in some countries, be only kept in remembrance. But it is otherwise with the rabbit, its fecundity being greater, and its means of safety more certain. The hare seems to have more various arts and instincts to escape its pursuers, by doubling, squatting, and winding; the rabbit has but one art of defence alone, but in that one finds safety; by making itself a hole, where it continues a great part of the day, and breeds up its young: there it continues secure from the fox, the hound, the kite, and every other enemy.

Nevertheless, though this retreat be safe and convenient, the rabbit, does not seem to be naturally fond of keeping there. It loves the sunny field and the open pasture; it seems to be a chilly animal, and dislikes the coldness of its under-ground habitation. It is, therefore, continually out, when it does not fear disturbance; and the female often brings forth her young at a distance from the warren, in a hole not above a foot deep at the most. There she suckles them for about a month; covering them over with moss and grass whenever she goes to pasture, and scratching them up at her return. It has been said, indeed, that this shallow hole without the warren is made lest the male should attack and destroy her young; but I have seen the male himself attend the young there, lead them out to feed, and conduct them back upon the return of the dam. This external retreat seems a kind of country-house, at a distance from the general habitation; it is usually made near some spot of excellent pasture, or in the midst

of a field of sprouting corn. To this both male and female often retire from the warren, lead their young by night to the food which lies so convenient, and, if not disturbed, continue there till they are grown up. There they find a greater variety of pasture than near the warren, which is generally eaten bare; and enjoy a warmer sun, by covering themselves up in a shallower hole. Whenever they are disturbed, they then forsake their retreat of pleasure for one of safety; they fly to the warren with their utmost speed, and if the way be short, there is scarcely any dog, how swift soever, that can overtake them.

But it does not always happen that these animals are possessed of one of these external apartments; they most usually bring forth their young in the warren, but always in a hole separate from the male. On these occasions, the female digs herself a hole,* different from the ordinary one by being more intricate, at the bottom of which she makes a more ample apartment. This done, she pulls off from her belly a good quantity of her hair, with which she makes a kind of bed for her young. During the two first days she never leaves them; and does not stir out but to procure nourishment, which she takes with the utmost despatch; in this manner suckling her young for near six weeks, until they are strong, and able to go abroad themselves. During all this time, the male seldom visits their separate apartment; but when they are grown up, so as to come to the mouth of the hole, he then seems to acknowledge them as his offspring, takes them between his paws, smooths their skin, and licks their eyes: all of them, one after the other, have an equal share in his caresses.

In this manner the rabbit, when wild, consults its pleasure and its safety; but those that are bred up

* Buffon.

tame do not take the trouble of digging a hole, conscious of being already protected. It has also been observed,* that when people, to make a warren, stock it with tame rabbits, these animals, having been unaccustomed to the art of scraping a hole, continue exposed to the weather, and every other accident, without ever burrowing. Their immediate offspring, also, are equally regardless of their safety; and it is not till after two or three generations, that these animals begin to find the necessity and convenience of an asylum, and practise an art which they could only learn from nature.

Rabbits of the domestic breed, like all other animals that are under the protection of man, are of various colours; white, brown, black, and mouse colour. The black are the most scarce; the brown, white, and mouse colour, are in greater plenty. Most of the wild rabbits are of a brown, and it is the colour which prevails among the species; for in every nest of rabbits, whether the parents be black or white, there are some brown ones found of the number. But in England there are many warrens stocked with the mouse coloured kinds, which some say came originally from an island in the river Humber, and which still continue their original colour, after a great number of successive generations. A gentleman† who bred up tame rabbits for his amusement, gives the following account of their production: "I began," says he, "by having but one male and female only; the male was entirely white, and the female brown; but, in their posterity, the number of the brown by far exceeded those of any other colour: there were some white, some party-coloured, and some black. It is surprising how much the descendants were obedient and submissive to their common parent; he was easily distinguished from

* Buffon. † M. Montier, as quoted by M. Buffon.

the rest by his superior whiteness; and, however numerous the other males were, this kept them all in subjection. Whenever they quarrelled among each other, either for their females or provisions, as soon as he heard the noise he ran up to them with all despatch; and, upon his appearance, all was instantly reduced to peace and order. If he caught any of them in the fact, he instantly punished them, as an example to the rest. Another instance of his superiority was, that having accustomed them to come to me with the call of a whistle, the instant this signal was given, I saw him marshalling them up, leading them the foremost, and then suffering them all to file off before him.

The rabbit,* though less than the hare, generally lives longer. As these animals pass the greater part of their lives in their burrow, where they continue at ease and unmolested, they have nothing to prevent the regularity of their health, or the due course of their nourishment. They are, therefore, generally found fatter than the hare; but their flesh is, notwithstanding, much less delicate. That of the old ones, in particular, is hard, tough, and dry; but it is said, that in warmer countries they are better tasted. This may very well be, as the rabbit, though so very plentiful in Great Britain and Ireland, is nevertheless a native of the warmer climates, and has been originally imported into these kingdoms from Spain. In that country, and in some of the islands in the Mediterranean, we are told that they once multiplied in such numbers as to prove the greatest nuisance to the natives. They at first demanded military aid to destroy them; but soon after they called in the assistance of ferrets, which originally came from Africa, and these, with much more ease and expedition, contrived to lessen the calamity. In fact,

* M. Moutier, as quoted by M. Buffon.

rabbits are found to love a warm climate, and to be incapable of bearing the cold of the north; so that in Sweden they are obliged to be littered in the houses. It is otherwise in all the tropical climates, where they are extremely common, and where they seldom burrow, as with us. The English counties that are most noted for these animals, are Lincolnshire, Norfolk, and Cambridgeshire. They delight in grounds of a sandy soil, which are warmer than those of clay, and which also furnish a softer and finer pasture.

The tame rabbits are larger than the wild ones, from their taking more nourishment and using less exercise; but their flesh is not so good, being more insipid, and softer. In order to improve it, they are chiefly fed upon bran, and are stinted in their water; for, if indulged in too great a plenty of moist food, they are apt, as the feeders express it, to grow rotten. The hair or fur is a very useful commodity, and is employed in England for several purposes, as well when the skin is dressed with it on, as when it is pulled off. The skins, especially the white, are used for lining clothes, and are considered as a cheap imitation of ermine. The skin of the male is usually preferred, as being the most lasting, but it is coarser; that on the belly in either sex, is the best and finest. But the chief use made of rabbits' fur, is in the manufacture of hats; it is always mixed, in certain proportions, with the fur of the beaver; and it is said to give the latter more strength and consistence.

The Syrian rabbit, like all other animals bred in that country, is remarkable for the length of its hair; it falls along the sides in wavy wreathes, and is, in some places, curled at the end, like wool: it is shed once a-year in large masses; and it often happens that the rabbit, dragging a part of its robe on the ground, appears as if it had got another leg, or a longer tail. There are no rabbits naturally in Ame-

fon calls the *Coquallin*, is a beautiful animal of this kind, and very remarkable for the variety of its colours. Its belly is of a bright yellow; its head and body variegated with white, black, brown, and orange colour. It wants the tufts at the extremity of its ears; and does not climb trees as most of the kind are seen to do. To this list may be added the *little ground squirrel of Carolina*, of a reddish colour, and blackish stripes on each side; and, like the former, not delighting in trees. Lastly, the *squirrel of New Spain*, which is of a deep iron-gray colour, with seven longitudinal whitish streaks along the sides of the male, and five along those of the female. As for the flying squirrels, they are of a distinct kind, and shall be treated of by themselves.

These, which I suppose to be but a few of the numerous varieties of the squirrel, sufficiently serve to show how extensively this animal is diffused over all parts of the world. It is not to be supposed, however, that every variety is capable of sustaining every climate; for few animals are so tender, or so little able to endure a change of abode, as this. Those bred in the tropical climates will only live near a warm sun; while, on the contrary, the squirrel of Siberia will scarcely endure the temperature of ours. These varieties do not only differ in their constitutions and colour, but in their dispositions also: for while some live on the tops of trees, others feed, like rabbits, on vegetables below. Whether any of these so variously coloured, and so differently disposed, would breed among each other, we cannot tell; and since, therefore, we are left in uncertainty upon this point, we are at liberty either to consider each as a distinct species by itself, or only a variety that accident might have originally produced, and that the climate or soil might have continued. For my own part, as the original character of the squir-

rel is so strongly marked upon them all, I cannot help considering them in the latter point of view—rather as the common descendants of one parent, than originally formed with such distinct similitudes.

The squirrel is a beautiful little animal,* which is but half savage; and which, from the gentleness and innocence of its manners, deserves our protection. It is neither carnivorous nor hurtful; its usual food is fruits, nuts, and acorns; it is cleanly, nimble, active, and industrious; its eyes are sparkling, and its physiognomy marked with meaning. It generally, like the hare and rabbit, sits up on its hinder legs, and uses the fore-paws as hands; these have five claws or toes, as they are called, and one of them is separated from the rest like a thumb. This animal seems to approach the nature of birds, from its lightness, and surprising agility on the tops of trees. It seldom descends to the ground, except in case of storms, but jumps from one branch to another; feeds, in spring, on the buds and young shoots; in summer, on the ripening fruits, and particularly the young cones of the pine tree. In autumn it has an extensive variety to feast upon; the acorn, the filbert, the chesnut, and the wilding. This season of plenty, however, is not spent in idle enjoyment: the provident little animal gathers at that time its provisions for the winter; and cautiously foresees the season when the forest shall be stripped of its leaves and fruitage.

Its nest is generally formed among the large branches of a great tree, where they begin to fork off into small ones. After choosing the place where the timber begins to decay, and a hollow may the more easily be formed, the squirrel begins by making a kind of a level between the forks; and then, bringing moss, twigs, and dry leaves, it binds them

* Buffon.

together with great art, so as to resist the most violent storm. This is covered up on all sides, and has but a single opening at top, which is just large enough to admit the little animal; and this opening is itself defended from the weather by a kind of canopy, made in the fashion of a cone, so that it throws off the rain, though never so heavy. The nest thus formed, with a very little opening above, is, nevertheless, very commodious and roomy below; soft, well knit together, and every way convenient and warm. In this retreat the little animal brings forth its young, shelters itself from the scorching heat of the sun, which it seems to fear, and from the storms and inclemency of winter, which it is still less capable of supporting. Its provision of nuts and acorns is seldom in its nest, but in the hollows of the tree, laid up carefully together, and never touched but in cases of necessity. Thus one single tree serves for a retreat and a store-house; and without leaving it during the winter, the squirrel possesses all those enjoyments that its nature is capable of receiving. But it sometimes happens that its little mansion is attacked by a deadly and powerful foe. The martin goes often in quest of a retreat for its young, which it is incapable of making for itself: for this reason it fixes upon the nest of a squirrel, and, with double injustice, destroys the tenant, and then takes possession of the mansion.

However, this is a calamity that but seldom happens; and, of all other animals, the squirrel leads the most frolicksome playful life; being surrounded with abundance, and having few enemies to fear. They are in heat early in the spring; when, as a modern naturalist says,* it is very diverting to see the female feigning an escape from the pursuit of two or three males, and to observe the various proofs

* British Zoology.

which they give of their agility, which is then exerted in full force. Nature seems to have been particular in her formation of these animals for propagation; however, they seldom bring forth above four or five young at a time, and that but once a-year. The time of their gestation seems to be about six weeks; they are pregnant in the beginning of April, and bring forth about the middle of May.

The squirrel is never found in the open fields, nor yet in copses or underwoods; it always keeps in the midst of the tallest trees, and, as much as possible, shuns the habitations of men. It is extremely watchful: if the tree in which it resides be but touched at the bottom, the squirrel instantly takes the alarm, quits its nest, at once flies off to another tree, and thus travels, with great ease, along the tops of the forest, until it finds itself perfectly out of danger In this manner it continues for some hours, at a distance from home, until the alarm be passed away; and then it returns, by paths that to all quadrupeds but itself are utterly impassable. Its usual way of moving is by bounds: these it takes from one tree to another, at forty feet distance; and if at any time it is obliged to descend, it runs up the side of the next tree with amazing facility. It has an extremely sharp piercing note, which most usually expresses pain; it has another, more like the purring of a cat, which it employs when pleased; at least it appeared so in that from whence I have taken a part of this description.

In Lapland, and the extensive forests to the north, the squirrels are observed to change their habitation, and to remove in vast numbers from one country to another. In these migrations they are generally seen by thousands, travelling directly forward; while neither rocks, forests, nor even the broadest waters, can stop their progress. What I am going

to relate appears so extraordinary, that were it not attested by numbers of the most credible historians, among whom are Klein and Linnæus, it might be rejected with that scorn with which we treat imposture or credulity; however, nothing can be more true than that when these animals, in their progress, meet with broad rivers, or extensive lakes, which abound in Lapland, they take a very extraordinary method of crossing them. Upon approaching the banks, and perceiving the breadth of the water, they return, as if by common consent, into the neighbouring forest, each in quest of a piece of bark, which answers all the purposes of boats for wafting them over. When the whole company are fitted in this manner, they boldly commit their little fleet to the waves; every squirrel sitting on its own piece of bark, and fanning the air with its tail, to drive the vessel to its desired port. In this orderly manner they set forward, and often cross lakes several miles abroad. But it too often happens that the poor mariners are not aware of the dangers of their navigation; for although at the edge of the water it is generally calm, in the midst it is always more turbulent. There the slightest additional gust of wind oversets the little sailor and his vessel together. The whole navy, that but a few minutes before rode proudly and securely along, is now overturned, and a shipwreck of two or three thousand sail ensues. This, which is so unfortunate for the little animal, is generally the most lucky accident in the world for the Laplander on the shore; who gathers up the dead bodies as they are thrown in by the waves, eats the flesh, and sells the skins for about a shilling the dozen.*

The squirrel is easily tamed, and it is then a very familiar animal. It loves to lie warm, and will often

* Œuvres de Regnard.

1. Flying Squirrel 2. Little Grey Squirrel
3. Palm Squirrel.

creep into a man's pocket or his bosom. It is usually kept in a box, and fed with hazel nuts. Some find amusement in observing with what ease it bites the nut open, and eats the kernel. In short, it is a pleasing pretty little domestic; and its tricks and habitudes may serve to entertain a mind unequal to stronger operations.

THE FLYING SQUIRREL.

Mr. RAY was justly of opinion, that the Flying Squirrel might more properly be said to be of the rat kind, because its fur is shorter than in other squirrels, and its colours also more nearly approach the former. However, as mankind have been content to class it among the squirrels, it is scarcely worth making a new distinction in its favour. This little animal, which is frequently brought over to England, is less than a common squirrel, and bigger than a field mouse. Its skin is very soft, and elegantly adorned with a dark fur in some places, and light gray in others. It has large prominent black and very sparkling eyes, small ears, and very sharp teeth, with which it gnaws any thing quickly. When it does not leap, its tail, which is pretty enough, lies close to its back; but when it takes its spring, the tail is moved backwards and forwards from side to side. It is said to partake somewhat of the nature of the squirrel, of the rat, and of the dormouse; but that in which it is distinguished from all other animals, is its peculiar conformation for taking those leaps that almost look like flying. It is indeed amazing to see it, at one bound, dart above a hundred yards from one tree to another. They are assisted in this spring by a very peculiar forma-

tion of the skin that extends from the fore-feet to the hinder; so that when the animal stretches its fore-legs forward, and its hind-legs backward, this skin is spread out between them, somewhat like that between the legs of a bat. The surface of the body being thus increased, the little animal keeps buoyant in the air until the force of its first impulsion is expired, and then it descends. This skin, when the creature is at rest, or walking, continues wrinkled up on its sides; but when its limbs are extended, it forms a kind of web between them of above an inch broad on either side, and gives the whole body the appearance of a skin floating in the air. In this manner, the flying squirrel changes place, not like a bird, by repeated strokes of its wings, but rather like a paper kite, supported by the expansion of the surface of its body; but with this difference, however, that being naturally heavier than the air, instead of mounting it descends; and that jump, which upon the ground would not be above forty yards, when from a higher tree to a lower, may be above a hundred.

This little animal is more common in America than in Europe, but not very commonly to be seen in either. It is usually found, like the squirrel, on the tops of trees; but, though better fitted for leaping, it is of a more torpid disposition, and is seldom seen to exert its powers; so that it is often seized by the polecat and the martin. It is easily tamed, but apt to break away whenever it finds an opportunity. It does not seem fond of nuts or almonds, like other squirrels, but is chiefly pleased with the sprouts of the birch, and the cones of the pine. It is fed in its tame state with bread and fruits; it generally sleeps by day, and is always most active by night. Some naturalists gravely caution us not to let it get among our corn-fields, where they tell us it will do a great

deal of damage, by cropping the corn as soon as it begins to ear!*

THE MARMOT.

From the description of the squirrel and its varieties, we proceed to a different tribe of animals, no way indeed resembling the squirrel, but still something like the rabbit and the hare. We are to keep these two animals still in view, as the centre of our comparison; as objects to which many others may bear some similitude, though they but little approach each other. Among the hare kind is the Marmot,† which naturalists have placed either among the hare kind or the rat kind, as it suited their respective systems. In fact, it bears no great resemblance to either; but of the two, it approaches much nearer the hare, as well in the make of its head, as in its size, in its bushy tail, and particularly in its chewing the cud, which alone is sufficient to determine our choice in giving it its present situation. How it ever came to be degraded into the rat or mouse I cannot conceive; for it no way resembles them in size, being nearly as big as a hare; or in its disposition, since no animal is more tractable, nor more easily tamed.

The marmot is, as was said, almost as big as a hare, but it is more corpulent than a cat, and has shorter legs. Its head pretty nearly resembles that of a hare, except that its ears are much shorter. It

* He may easily be made tame; but he is apt to do a great deal of damage in the corn-fields, because he will crop the corn as soon as it begins to ear.—*Brooke's Nat. Hist.*

[† This animal has two wedge-like cutting teeth in each jaw; the grinders are five above, and four below, on each side; and there are perfect clavicles or collar-bones.]

is clothed all over with very long hair, and a shorter fur below. These are of different colours, black and gray. The length of the hair gives the body the appearance of greater corpulence than it really has, and at the same time shortens the feet, so that its belly seems touching the ground. Its tail is tufted and well furnished with hair, and it is carried in a straight direction with its body. It has five claws behind, and only four before. These it uses as the squirrel does, to carry its food to its mouth; and it usually sits upon its hinder parts to feed, in the manner of that little animal.

The marmot is chiefly a native of the Alps; and when taken young, is tamed more easily than any other wild animal, and almost as perfectly as any of those that are domestic.* It is readily taught to dance, to wield a cudgel, and to obey the voice of its master. Like the cat, it has an antipathy to the dog; and when it becomes familiar to the family, and is sure of being supported by its master, it attacks and bites even the largest mastiff. From its squat muscular make, it has great strength joined to great agility. It has four large cutting teeth, like all those of the hare kind; but it uses them to much more advantage, since in this animal they are very formidable weapons of defence. However, it is in general a very inoffensive animal; and, except its enmity to dogs, seems to live in friendship with every creature, unless when provoked. If not prevented, it is very apt to gnaw the furniture of a house, and even to make holes through wooden partitions; from whence, perhaps, it has been compared to the rat. As its legs are very short, and made somewhat like those of a bear, it is often seen sitting up, and even walking on its hind-legs in like manner; but with the fore-paws,

* Buffon, from whence the remainder of this description is taken.—*N. B.* He takes it from Gesner, vol. xvii.

as was said, it uses to feed itself in the manner of a squirrel. Like all of the hare kind, it runs much swifter up-hill than down; its climbs trees with great ease, and runs up the clefts of rocks, or the contiguous walls of houses, with great facility. It is ludicrously said that the Savoyards, who are the only chimney-sweepers of Paris, have learned this art from the marmot, which is bred in the same country.

These animals eat indiscriminately of whatever is presented to them; flesh, bread, fruits, herbs, roots, pulse, and insects. But they are particularly fond of milk and butter. Although less inclined to petty thefts than the cat, yet they always try to steal into the dairy, where they lap up the milk like a cat, purring all the while like that animal, as an expression of their being pleased. As to the rest, milk is the only liquor they like. They seldom drink water, and refuse wine. When pleased or caressed, they often yelp like puppies; but when irritated or frighted, they have a piercing note that hurts the ear. They are very cleanly animals, and, like the cat, retire upon necessary occasions; but their bodies have a disagreeable scent, particularly in the heat of summer. This tinctures their flesh, which, being very fat and firm, would be very good, were not this flavour always found to predominate.

We have hitherto been describing affections in this animal which it has in common with many others; but we now come to one which particularly distinguishes it from all others of this kind, and, indeed, from every other quadruped, except the bat and the dormouse. This is its sleeping during the winter. The marmot, though a native of the highest mountains, and where the snow is never wholly melted, nevertheless seems to feel the influence of the cold more than any other, and in a manner has all its faculties chilled up in winter. This ex-

traordinary suspension of life and motion for more than half the year, deserves our wonder, and excites our attention to consider the manner of such a temporary death, and the subsequent revival. But first to describe, before we attempt to discuss.

The marmot, usually at the end of September, or the beginning of October, prepares to fit up its habitation for the winter, from which it is never seen to issue till about the beginning or the middle of April. This animal's little retreat is made with great precaution, and fitted up with art. It is a hole on the side of a mountain, extremely deep, with a spacious apartment at the bottom, which is rather longer than it is broad. In this several marmots can reside at the same time, without crowding each other, or injuring the air they breathe. The feet and claws of this animal seem made for digging; and, in fact, they burrow into the ground with amazing facility, scraping up the earth like a rabbit, and throwing back what they have thus loosened behind them. But the form of their hole is still more wonderful; it resembles the letter Y; the two branches being two openings which conduct into one channel, and this terminates in their general apartment that lies at the bottom. As the hole is made on the declivity of a mountain, there is no part of it on a level but the apartment at the end. One of the branches or openings issues out, sloping downwards; and this serves as a kind of sink or drain to the whole family, where they make their excrements, and where the moisture of the place is drawn away. The other branch, on the contrary, slopes upwards, and this serves as their door upon which to go out and in. The apartment at the end is very warmly stuccoed round with moss and hay, of both which they make an ample provision during the summer. As this is a work of great labour, so it is undertaken in common; some

cut the finest grass, others gather it, and others take their turns to drag it into their hole. Upon this occasion, as we are told, one of them lies on its back, permits the hay to be heaped upon its belly, keeps its paws upright to make greater room; and in this manner, lying still upon its back, it is dragged by the tail, hay and all, to their common retreat. This also some give as a reason for the hair being generally worn away on their backs, as is usually the case; however, a better reason for this may be assigned, from their continually rooting up holes, and passing through narrow openings. But, be this as it will, certain it is that they all live together, and work in common, to make their habitation as snug and convenient as possible. In it they pass three parts of their lives; into it they retire when the storm is high; in it they continue while it rains; there they remain when apprehensive of danger, and never stir out except in fine weather, never going far from home even then. Whenever they venture abroad, one is placed as a sentinel, sitting upon a lofty rock, while the rest amuse themselves in playing along the green fields, or are employed in cutting grass and making hay for their winter's convenience. Their trusty sentinel, when an enemy, a man, a dog, or a bird of prey approaches, apprizes its companions with a whistle, upon which they all make home, the sentinel himself bringing up the rear.

But it must not be supposed that this hay is designed for provision; on the contrary, it is always found in as great plenty in their holes at the end as at the beginning of winter; it is only sought for the convenience of their lodging, and the advantages of their young: As to provision, they seem kindly apprised by nature that during the winter they shall not want any, so that they make no preparations for food, though so diligently employed in fitting up their

abode. As soon as they perceive the first approaches of the winter, during which their vital motions are to continue in some measure suspended they labour very diligently to close up the two entrances of their habitation, which they effect with such solidity, that it is easier to dig up the earth any where else than where they have closed it. At that time they are very fat, and some of them are found to weigh above twenty pounds; they continue so for even three months more; but by degrees their flesh begins to waste, and they are usually very lean by the end of winter. When their retreat is opened, the whole family is then discovered, each rolled into a ball, and covered up under the hay. In this state they seem entirely lifeless; they may be taken away, and even killed, without their testifying any great pain; and those who find them in this manner, carry them home, in order to breed up the young, and eat the old ones. A gradual and gentle warmth revives them; but they would die if too suddenly brought near the fire, or if their juice were too quickly liquefied.

Strictly speaking, says M. Buffon, these animals cannot be said to sleep during the winter; it may be called rather a torpor, a stagnation of all the faculties.* This torpor is produced by the congelation of their blood, which is naturally much colder than that of all other quadrupeds. The usual heat of man, and other animals, is about thirty degrees above congelation; the heat of these is not above ten degrees. Their internal heat is seldom greater than that of the temperature of the air. This has been often tried by plunging the ball of the thermometer into the body of a living dormouse, and it never rose beyond its usual pitch in air, and sometimes it sunk above a degree. It is not surprising, therefore, that these animals, whose blood is so cold naturally,

* Buffon, vol. xvi. *Loire.*

should become torpid when the external cold is too powerful for the small quantity of heat in their bodies, yet remaining; and this always happens when the thermometer is not more than ten degrees above congelation. This coldness M. Buffon has experienced in the blood of the bat, the dormouse, and the hedgehog, and with great justice he extends the analogy to the marmot, which like the rest is seen to sleep all the winter. This torpid state continues as long as the cause which produces it continues; and it is very probable that it might be lengthened out beyond its usual term, by artificially prolonging the cold: if for instance, the animal were rolled up in wool, and placed in a cold cellar, nearly approaching to, but not quite so cold as an ice-house, for that would kill them outright, it would remain perhaps a whole year in its state of insensibility. However this be, if the heat of the air be above ten degrees, these animals are seen to revive; and if it be continued in that degree of temperature they do not become torpid, but eat and sleep at proper intervals, like all other quadrupeds whatever.

From the above account, we may form some conception of the state in which these animals continue during the winter. As in some disorders, where the circulation is extremely languid, the appetite is diminished in proportion, so in these, the blood scarcely moving, or only moving in the greater vessels, they want no nourishment to repair what is worn away by its motions. They are seen, indeed, by slow degrees to become leaner in proportion to the slow attrition of their fluids; but this is not perceptible except at the end of some months. Man is often known to gather nourishment from the ambient air; and these also may in some measure be supplied in the same manner; and having sufficient motion in their fluids to keep them from putrefaction, and just suf-

ficient nourishment to supply the waste of their languid circulation, they continue rather feebly alive than sleeping.

These animals produce but once a year, and usually bring forth but three or four at a time. They grow very fast, and the extent of their lives is not above nine or ten years; so that the species is neither numerous nor very much diffused. They are chiefly found in the Alps, where they seem to prefer the brow of the highest mountains to the lowest ranges, and the sunny side to that in the shade. The inhabitants of the country where they chiefly reside, when they observe the hole, generally stay till winter before they think proper to open it; for if they begin too soon the animal wakes, and, as it has a surprising faculty of digging, makes its hole deeper in proportion as they follow. Such as kill it for food, use every art to improve the flesh, which is said to have a wild taste, and to cause vomitings.* They therefore take away the fat, which is in great abundance, and salt the remainder, drying it somewhat in the manner of bacon. Still, however, it is said to be very indifferent eating. This animal is found in Poland under the denomination of the Bobak, entirely resembling that of the Alps, except that the latter has a toe more upon its fore-foot than the former. It is found also in Siberia under the name of the Jevraska, being rather smaller than either of the other two. Lastly, it is found in Canada by the appellation of the Monax, differing only from the rest in having a bluish snout, and a longer tail.

* Dictionnaire Raisonné, vol. iii, p. 29.

THE AGOUTI.

FROM the marmot, which differs from the hare so much in the length of its fur, we go to the Agouti,* another species equally differing in the shortness of its hair. These bear some rude resemblance to the hare and the rabbit in their form and manner of living, but sufficiently differing to require a particular description. The first of these, and that the largest, as was hinted above, is called the Agouti. This animal is found in great abundance in the southern parts of America, and has by some been called the *rabbit* of that continent. But, though in many respects it resembles the rabbit, yet still in many more it differs, and is, without all doubt, an animal peculiar to the new world only. The agouti is about the size of a rabbit, and has a head very much resembling it, except that the ears are very short in comparison. It resembles the rabbit also in the arched form of its back, in the hind-legs, being longer than the fore, and in having four great cutting teeth, two above and two below; but then it differs in the nature of its hair, which is not soft and downy as in the rabbit, but hard, and bristly like that of a sucking pig, and of a reddish-brown colour. It differs also in the tail, which is even shorter than in the rabbit, and entirely destitute of hair. Lastly, it differs in the number of its toes, having but three on the hinder feet, whereas the rabbit has five. All these distinctions, however, do not countervail against its general form, which resembles that of a rabbit, and most travellers have called it by that name.

[* The Agouti, Paca, Aperea, and Guinea Pig, have two wedge-like cutting teeth in each jaw, and eight grinders on each side in both jaws: the fore-feet are furnished with four or five toes; the hind-feet with three, four, or five each: the tail is either very short or entirely wanting: and they have no clavicles or collar-bones.]

As this animal differs in form, it differs still more in habitudes and disposition. As it has the hair of a hog, so also it has its voraciousness.* It eats indiscriminately of all things, and when satiated, hides the remainder, like the dog or the fox, for a future occasion. It takes a pleasure in gnawing and spoiling every thing that it comes near. When irritated, its hair stands erect along the back, and like the rabbit it strikes the ground violently with its hind-feet. It does not dig a hole in the ground, but burrows in the hollows of trees. Its ordinary food consists of the roots of the country, potatoes and yams, and such fruits as fall from the trees in autumn. It uses its fore-paws, like the squirrel, to carry its food to its mouth; and as its hind-feet are longer than the fore, it runs very swiftly upon plain ground or up a hill, but upon a descent it is in danger of falling. Its sight is excellent, and its hearing equals that of any other animal; whenever it is whistled to, it stops to hearken. The flesh of such as are fat and well fed is tolerable food, although it has a peculiar taste, and is a little tough. The French dress it like a sucking pig, as we learn from M. Buffon's account; but the English dress it with a pudding in its belly, like a hare. It is hunted by dogs; and whenever it is got into a sugar ground, where the canes cover the place, it is easily overtaken, for it is embarrassed every step it takes, so that a man may easily come up with it without any other assistance. When in the open country, it usually runs with great swiftness before the dogs until it gains its retreat, within which it continues to hide, and nothing but filling the hole with smoke can force it out. For this purpose the hunter burns faggots or straw at the entrance, and conducts the smoke in such a manner that it fills the whole cavity. While this is doing, the poor little

* Buffon.

animal seems sensible of its danger, and begs for quarter with a most plaintive cry, seldom quitting its hole till the utmost extremity. At last, when half suffocated, it issues out, and trusts once more to its speed for protection. When still forced by the dogs, and incapable of making good a retreat, it turns upon the hunters, and with its hair bristling like a hog, and standing upon its hind-feet, it defends itself very obstinately. Sometimes it bites the legs of those that attempt to take it, and will take out the piece wherever it fixes its teeth.*

Its cry when disturbed or provoked resembles that of a sucking pig. If taken young, it is easily tamed, continues to play harmlessly about the house, and goes out and returns of its own accord. In a savage state it usually continues in the woods, and the female generally chooses the most obscure parts to bring forth her young. She there prepares a bed of leaves and dry grass, and generally brings forth two at a time. She breeds twice or thrice a-year, and carries her young from one place to another, as convenience requires, in the manner of a cat. She generally lodges them when three days old in the hollow of a tree, suckling them but for a very short time, for they soon come to perfection, and it should consequently follow that they soon grow old.

THE PACA.

The Paca is an animal also of South America, very much resembling the former, and like it has received the name of the American rabbit, but with as little propriety. It is about the size of a hare, or rather larger, and in figure somewhat like a suck-

* Ray's Synop.

ing pig, which it also resembles in its grunting and its manner of eating. It is, however, most like the agouti, although it differs in several particulars. Like the agouti, it is covered rather with coarse hair than a downy fur; but then it is beautifully marked along the sides with small ash-coloured spots, upon an amber-coloured ground; whereas the agouti is pretty much of one reddish colour. The paca is rather more thick and corpulent than the agouti; its nose is shorter, and its hind-feet have five toes, whereas the agouti has but three. As to the rest, this animal bears some distant resemblance to a rabbit; the ears are naked of hair, and somewhat sharp, the lower jaw is somewhat longer than the upper; the teeth, the shape of the head, and the size of it, are like to those of a rabbit. It has a short tail likewise, though not tufted, and its hinder legs are longer than the fore. It also burrows in the ground like that animal, and from this similitude alone travellers might have given it the name.

The paca does not make use of its fore-paws, like the squirrel or the agouti, to carry its food to the mouth, but hunts for it on the ground, and roots like a hog. It is generally seen along the banks of rivers, and is only to be found in the moist and warm countries of South America. It is a very fat animal, and in this respect much preferable to the agouti, which is most commonly found lean. It is eaten, skin and all, like a young pig, and is considered as a great delicacy. Like the former little animal, it defends itself to the last extremity, and is very seldom taken alive. It is persecuted not only by man, but by every beast and bird of prey, who all watch its motions, and, if it ventures at any distance from its hole, are sure to seize it. But although the race of these little animals is thus continually destroyed, it finds some refuge in its hole from the general combina-

tion; and breeds in such numbers, that the diminution is not perceptible.

To these animals may be added others, very similar both in form and disposition; each known by its particular name in its native country, but which travellers have been contented to call rabbits or hares, of which we have but indistinct notice. The Tapeti, or the Brasilian rabbit, is in shape like our English ones, but is much less, being said to be not above twice the size of a dormouse. It is reddish on the forehead, and a little whitish under the throat. It is remarkable for having no tail; but it has long ears and whiskers, like our rabbits, and black eyes. It does not burrow, like ours, but lives at large, like the hare.

The APEREA is also called by some the Brasilian rabbit, being an animal that seems to partake of the nature of a rabbit and a rat. The ears are like those of a rat, being short and round; but the other parts are like those of a rabbit, except that it has but three toes on the hinder legs, like the agouti.

To these imperfect sketches of animals, little known, others less known might be added; for as nature becomes more diminutive, her operations are less attentively regarded. I shall only, therefore, add one animal more to this class, and that very well known, I mean the Guinea-Pig, which Brisson places among those of the rabbit kind; and as I do not know any other set of animals with which it can be so well compared, I will take leave to follow his example.

THE GUINEA PIG.

THE Guinea-Pig is a native of the warmer climates, but has been so long rendered domestic, and so widely diffused, that it is now become common in every part of the world. There are few unacquainted with the figure of this little animal: in some places it is considered as the principal favourite, and is often found even to displace the lap-dog. It is less than a rabbit, and its legs are shorter; they are scarcely seen, except when it moves; and the neck also is so short, that the head seems stuck upon the shoulders. The ears are short, thin, and transparent; the hair is like that of a sucking pig, from whence it has taken the name; and it wants even the vestiges of a tail. In other respects it has some similitude to the rabbit. When it moves, its body lengthens like that animal; and when it is at rest, it gathers up in the same manner. Its nose is formed with the rabbit lip, except that its nostrils are much farther asunder. Like all other animals in a domestic state, its colours are different; some are white, some are red, and others both red and white. It differs from the rabbit in the number of its toes, having four toes on the feet before, and but three on those behind. It strokes its head with the fore-feet like the rabbit; and, like it, sits upon the hind-feet; for which purpose, there is a naked callous skin on the back part of the legs and feet.

These animals are of all others the most helpless and inoffensive.* They are scarcely possessed of courage sufficient to defend themselves against the meanest of all quadrupeds, a mouse. Their only animosity is exerted against each other; for they will

* This history is partly taken from the Amœnitates Academicæ, vol. iv, p. 202.

often fight very obstinately, and the stronger is often known to destroy the weaker. But against all other aggressors, their only remedy is patience and non-resistance. How, therefore, these animals, in a savage state, could contrive to protect themselves, I have not been able to learn; as they want strength, swiftness, and even the natural instinct so common to almost every other creature.

As to their manner of living among us, they owe their lives entirely to our unceasing protection. They must be constantly attended, shielded from the excessive colds of the winter, and secured against all other domestic animals, which are apt to attack them, from every motive, either of appetite, jealousy, or experience of their pusillanimous nature. Such indeed is their stupidity, that they suffer themselves to be devoured by the cats without resistance; and, different from all other creatures, the female sees her young destroyed without once attempting to protect them. Their usual food is bran, parsley, or cabbage leaves; but there is scarcely a vegetable cultivated in our gardens that they will not gladly devour. The carrot-top is a peculiar dainty, as also sallad: and those who would preserve their healths, would do right to vary their food; for if they be continued on a kind too succulent or too dry, the effects are quickly perceived upon their constitutions. When fed upon recent vegetables, they seldom drink. But it often happens, that conducted by nature, they seek drier food when the former disagrees with them. They then gnaw clothes, paper, or whatever of this kind they meet with; and, on these occasions, they are seen to drink like most other animals, which they do by lapping. They are chiefly fond of new milk; but in case of necessity, are content with water.

They move pretty much in the manner of rabbits,

though not near so swiftly; and when confined in a room, seldom cross the floor, but generally keep along the wall. The male usually drives the female on before him, for they never move abreast together, but constantly the one seems to tread in the footsteps of the preceding. They chiefly seek for the darkest recesses, and the most intricate retreats; where, if hay be spread as a bed for them, they continue to sleep together, and seldom venture out but when they suppose all interruption removed. On these occasions they act as rabbits; they swiftly move forward from their bed, stop at the entrance, listen, look round, and, if they perceive the slightest approach of danger, they run back with precipitation. In very cold weather, however, they are more active, and run about to keep themselves warm.

They are a very cleanly animal, and very different from those whose name they go by. If the young ones happen to fall into the dirt, or be any other way discomposed, the female takes such an aversion to them, that she never permits them to visit her more. Indeed, her whole employment, as well as that of the male, seems to consist in smoothing their skins, in disposing their hair, and improving its gloss The male and female take this office by turns; and when they have thus brushed up each other, they then bestow all their concern upon their young, taking particular care to make their hair lie smooth, and biting them if they appear refractory. As they are so solicitous for elegance themselves, the place where they are kept must be regularly cleaned, and a new bed of hay provided for them at least every week. Being natives of a warm climate, they are naturally chilly in ours; cleanliness, therefore, assists warmth, and expels moisture. They may be thus reared without the aid of any artificial heat; but in general there is no keeping them from the fire in winter, if they be once permitted to approach it.

When they go to sleep, they lie flat on their bellies, pretty much in their usual posture, except that they love to have their fore-feet higher than their hinder. For this purpose, they turn themselves several times round before they lie down, to find the most convenient situation. They sleep, like the hare, with their eyes half open; and continue extremely watchful if they suspect danger. The male and female are never seen both asleep at the same time; but while he enjoys his repose, she remains upon the watch, silently continuing to guard him, and her head turned towards the place where he lies. When she supposes that he has had his turn, she then awakes him with a kind of murmuring noise, goes to him, forces him from his bed, and lies down in his place. He then performs the same good turn for her, and continues watchful till she also has done sleeping.

These animals are exceedingly salacious, and generally are capable of coupling at six weeks old. The female never goes with young above five weeks, and usually brings forth from three to five at a time; and this not without pain. But what is very extraordinary, the female admits the male the very day she has brought forth, and becomes again pregnant; so that their multiplication is astonishing. She suckles her young but about twelve or fifteen days; and during that time does not seem to know her own; for if the young of any other be brought, though much older, she never drives them away, but suffers them even to drain her, to the disadvantage of her own immediate offspring. They are produced with the eyes open, like all others of the hare kind; and, in about twelve hours, equal even to the dam in agility. Although the dam has but two teats, yet she abundantly supplies them with milk; and they are also capable of feeding upon vegetables almost

from the very beginning. If the young ones are permitted to continue together, the stronger, as in all other societies, soon begins to govern the weak. Their contentions are often long and obstinate, and their jealousies very apparent. Their disputes are usually for the warmest place, or the most agreeable food. If one of them happens to be more fortunate in this respect than the rest, the strongest generally comes to dispossess it of its advantageous situation. Their manner of fighting, though terrible to them, is ridiculous enough to a spectator. One of them seizes the hair on the nape of the other's neck with its fore-teeth, and attempts to tear it away; the other, to retaliate, turns its hinder parts to the enemy, and kicks up behind like a horse, and with its hinder claws scratches the sides of its adversary; so that sometimes they cover each other with blood. When they contend in this manner, they gnash their teeth pretty loudly; and this is often a denunciation of mutual resentment.

These, though so formidable to each other, yet are the most timorous creatures upon earth with respect to the rest of animated nature; a falling leaf disturbs them, and every animal overcomes them. Hence they are difficultly tamed, and will suffer none to approach them, except the person by whom they are fed. Their manner of eating is something like that of the rabbit; and, like it, they appear also to chew the cud. Although they seldom drink, they make water every minute. They grunt somewhat like a young pig; and have a more piercing note to express pain. In a word, they do no injury; but then, except the pleasure they afford the spectator, they are of very little benefit to mankind. Some, indeed, dress and eat them; but their flesh is indifferent food, and by no means a reward for the trouble of rearing them. This, perhaps, might be improved, by keep-

ing them in a proper warren, and not suffering them to become domestic: however, the advantages that would result from this would be few, and the trouble great; so that it is likely they will continue an useless inoffensive dependant, rather propagated to satisfy caprice than to supply necessity.

END OF VOL. II.

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